

The LC/MS² Detection Methods of Aminelike Abuse Drugs

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In recent years, the problem of abuse drugs is day by day serious, and the youth come into contact with the opportunities of drug abuse have also increased enormously. In order to deter the phenomenon of abuse drugs, and tracking the user's drug addiction histories, therefore, we need to develop a detection method that can detect both low concentration of all common abuse drugs and their physiological metabolites, and also provided with accurate and rapid advantages. The research is aimed at class one to three of amines abuse drugs such as cocaine (Coc), methamphetamine (MA), flunitrazepam (FM2), ketamine (K), ketamine's physiological metabolites, norketamine (NK) and dehydronorketamine (DHNK) and so on each kind of compounds to develop LC/MS² detection method by ESI-IT detection mode. In this analysis method, we adopted operation method that used mutual as internal standard. First, obtained these compounds' main daughter ions after CID reaction, the m/z values respectively are: cocaine (304.0→182.0), methamphetamine (150.1→119.0), flunitrazepam (314.2→268.1), ketamine (238.0→206.9), norketamine (223.9→206.9), and dehydronorketamine (222.0→204.9). 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. When quantify the components of the solutions, we used the ratio of peak area as quantitative factor of analysis operation mode. This analysis results show that when using flunitrazepam as internal standard to quantify cocaine, methamphetamine, ketamine, norketamine, and dehydronorketamine and so on each kind of compounds, and used ketamine as internal standard to quantify flunitrazepam, the calibration curves all have good linearity. And if this LC/MS² 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.