

S16-3 Development of high resolution method using ultra fast LC-MS/MS

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Recently, crimes and accidents relating to abuse of ataractics have increased. Both fields of medical care and forensic science need analysis of many unknown samples. In these cases, rapidity and accuracy are important. The technology of mass spectrometry has advanced remarkably and the accurate mass measurement has been established. However, it is difficult to identify compounds that have similar chemical formulas or same molecular weight (*e.g.* analogues) even by the accurate mass measurement. Therefore, it is necessary to separate these compounds chromatographically.

We have developed a LC-MS/MS method using a high pressure resistance and ultra fast LC, and a column packed with particles of sub-2 μm . Ultra fast LC is widely known especially for its short analysis time. However, by using the “high-resolution performance”, great separations can be obtained. Furthermore, by using MRM mode detection, the sensitive, accurate qualitative and quantitative analysis is possible. This LC-MS/MS system has wide-ranging applications in fields that are needed rapidity and accuracy. In this symposium, I introduce the LC-MS/MS method of benzodiazepines 37 compounds. I also touch upon the good separation of many analogues and homologues of abused drugs.