

论文
HPLC/ESI-Q-TOF MS鉴定淋巴癌患者尿液中的修饰核苷

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摘要:

尿液修饰核苷反映了机体RNA的代谢速率及细胞增殖状况, 可以作为非常有发展潜力的肿瘤标志物进行研究. 尿液中的修饰核苷采用Oasis[®]HLB固相萃取柱进行纯化, 利用高效液相色谱与电喷雾质谱联用(HPLC-ESI-MS)、高分辨质谱(HRMS)及串联质谱(MS/MS)技术进行分离鉴定. 对淋巴癌患者尿中修饰核苷研究发现, 9种尿液核苷与标样的信息完全一致, 17种无标样的尿液修饰核苷也被鉴定, 其中包括3-甲基腺苷、7-甲基腺嘌呤、5'-脱氢-2'-脱氧次黄苷、3-甲基鸟嘌呤、O6-甲基鸟苷和7-甲基-1-乙基鸟苷6种未见报道的新尿液修饰核苷. 此方法能在无对照品的情况下快速、准确地提纯、分离和鉴定复杂的生物样品.

关键词: HPLC/ESI-Q-TOF MS 修饰核苷 淋巴癌病人 尿液

Identified of Urinary Modified Nucleosides of Lymph Cancer Patients by HPLC/ESI-Q-TOF MS

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Abstract:

As modified nucleosides reflect altered tRNA turnover which is impaired in the body of cancer patients, they have been evaluated as potential tumor markers. High performance liquid chromatography(HPLC) was combined with full-scan mass spectrometry, MS/MS analysis and accurate mass measurements in order to identify modified nucleosides which purified from urine. Potential urinary nucleosides were assessed by their evident UV absorbance in the HPLC chromatogram and then further examined by the mass spectrometric techniques. In this manner the information of 9 nucleosides were reproduced with the standard compounds and 17 modified nucleosides without commercial standards were identified in the urine samples from lymph cancer patients including 6 novel urinary modified nucleosides: N3-

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methyladenosine, *N*7-methyladenine, 5'-dehydro-2'-deoxyinosine, *N*3-methylguanine, *O*6-methylguanosine and *N*7-methyl-*N*1-ethylguanosine. This new method is rapid and specific to identify the complex biological samples without control compounds.

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