

电喷雾质谱法中 K^+ 加合离子受 Cs^+ 影响及在牛膝多糖分子量分布测定中的应用

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摘要 以测定牛膝多糖的分子量分布为例,研究了在 Cs^+ 存在情况下,电喷雾(ESI)/飞行时间质谱法(TOF-MS)中出现加合离子(adductions)的规律。实验中发现,牛膝多糖样品中加入适量的 Cs^+ ,可影响其与 Na^+ , K^+ 加合离子的相对丰度,使 K^+ 加合离子成为几乎唯一的加合离子形式,并获得了满意结果。另外讨论了 Cs^+ 浓度、喷管电压(nozzlepotential)对这一现象的影响。

关键词 [电喷雾离子化](#) [飞行时间质谱法](#) [牛膝多糖](#) [加合离子](#) [铯离子](#)

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Effect of Cs^+ on K^+ adduct ions in electrospray mass spectrometry and its application in measurement of molecular weight distribution for achyrantes bidentata polysaccharides

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Abstract Relative abundance of adduct ions was studied in measuring molecular weight distribution of achyrantes bidentata polysaccharides using electrospray ionization (ESI)/time-of-flight mass spectrometry (TOF MS) in the presence of Cs^+ . The relative abundance of K^+ adduct ions, $(C_6H_{10}O_5)_n + H_2O + H^+ + K^+$, was affected by Cs^+ and become an almost unique form of adduct ions at suitable concentrations of Cs^+ . This can greatly increase sensitivity and simplify the spectrum. Measuring the molecular weight distribution of achyrantes bidentata polysaccharides thus became easier, and electrospray ionization found a new application. The concentration of Cs^+ and nozzle potential were key factors that affect the relative abundance of K^+ adduct ions.

Key words [TIME-OF-FLIGHT MASS SPECTROMETRY](#) [CESIUM ION](#)

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