Reasons to choose a corona CAD detector for research

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In high-performance liquid chromatography (HPLC), the charged aerosol detector (CAD) offers an effective method for detecting non-volatile and semi-volatile compounds. The detection process involves nebulising the effluent from the HPLC column, charging the droplets through corona discharge, evaporating the solvent, and measuring the charged particles. This charge is correlated with the analyte mass for quantitative analysis. The CAD's capacity to identify a diverse range of compounds, including those with poor UV absorbance, such as sugars and lipids, in addition to its sensitivity and adaptability to gradient HPLC, renders it invaluable for complex matrix analysis. It is widely employed in the pharmaceutical industry for the detection of drugs and impurities, and in the food and beverage industry to measure sugars and lipids. CAD's versatility also extends to industrial applications, analyzing polymers and detergents, thereby broadening the applicability of HPLC beyond UV-detectable substances.

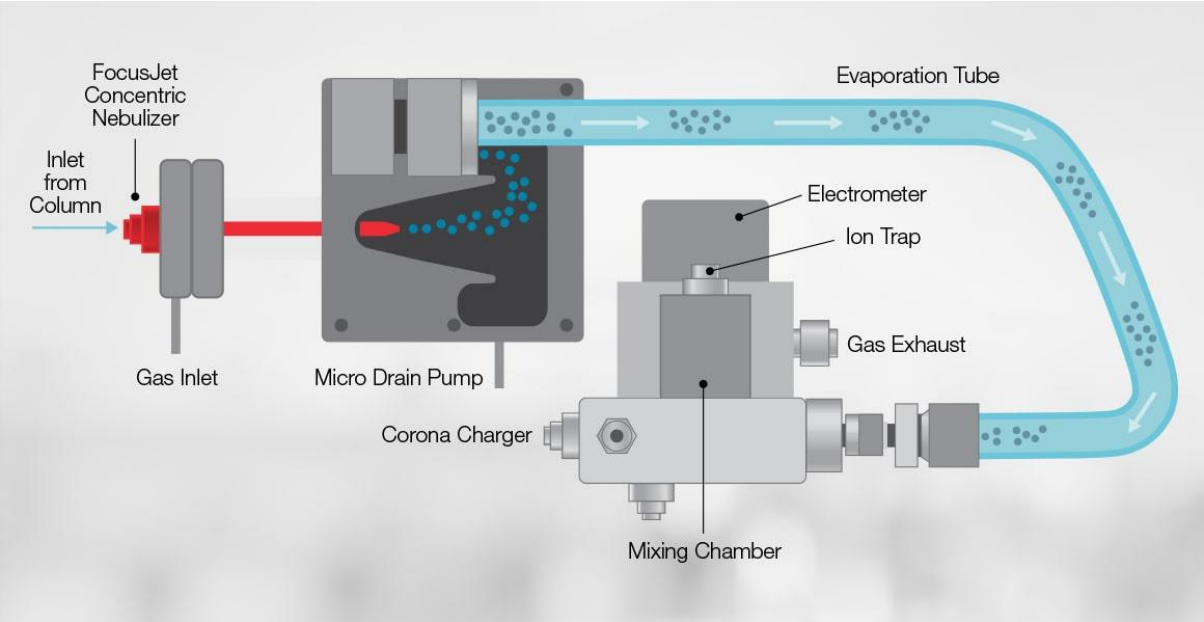

Figure 1. Schematic diagram of the Charged Aerosol Detector components

Building on the findings of research presented in article [1] on synthetic cannabinoids, the objective of our study was to investigate the quantitative detection of other cannabinoids in hemp-derived products using a corona detector, with the analysis based on a single standard, such as cannabidiol (CBD).

References

[1] Popławska M., Błażewicz A., Kamiński K., Bednarek E., Fijałek Z., Kozerski L. Application of high-performance liquid chromatography with charged aerosol detection (LC–CAD) for unified quantification of synthetic cannabinoids in herbal blends and comparison with quantitative NMR results. Forensic Toxicology 36 (2018): 122-140