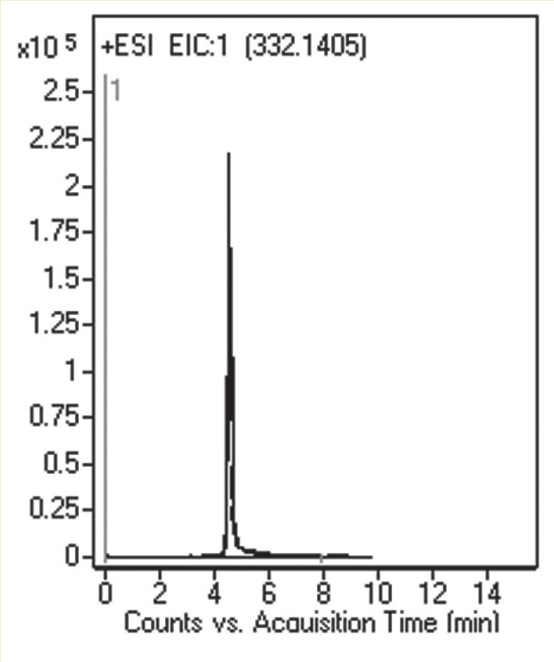
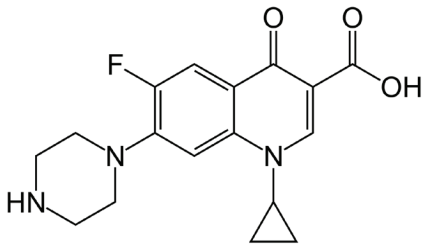
Ciprofloxacin by LC-MS

Transfer UV method to LC-MS





Ciprofloxacin

Note: Ciprofloxacin is a fluoroquinolone antibiotic which acts by inhibition of DNA gyrase and topoisomerase IV. It was once used as a drug of last resort for bacterial infections, but accumulated resistance has made the drug less effective in recent years.

Method Conditions

Column: **Cogent Diamond Hydride™**, 4µm, 100Å

Catalog No.: 70000-15P-2

Dimensions: 2.1 x 150 mm

Solvent: A: 50% DI H_2O / 50% 2-propanol / 0.1% formic acid (v/v)
B: Acetonitrile / 0.1% formic acid (v/v)

Gradient:

time (min.)	%B
0	90
3	10
6	10
7	90

Post Time: 3 min

Injection vol.: 1µL

Flow rate: 0.4 mL/min

Detection: UV 254 nm

Sample: A 250 mg strength ciprofloxacin tablet was ground and dissolved in 25 mL of 50% solvent A/50% solvent B diluent. Solution was sonicated 10 min and filtered through 0.45µm nylon syringe filter (MicroSolv Tech Corp.). Sample for injection was diluted 1:100 with the same diluent.

Peak: Ciprofloxacin 332.1405 m/z $(M+H)^+$

t_0: 0.9 min

Discussion

A UV-HPLC assay method described previously was transferred to an LC-MS system. The gradient conditions were modified to account for differences between UV and MS instruments. Also, the sample concentration used for this LCMS method was 10 times lower than for the UV system. As in the previous method, the peak shape for this difficult polar compound met the system suitability specification for the USP tailing factor.

This method illustrates how the MS-compatible HPLC-UV methods described in various application notes can be successfully adapted for LC-MS.

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