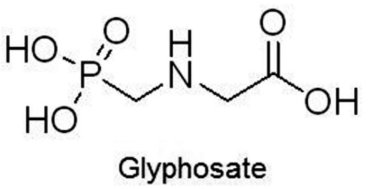
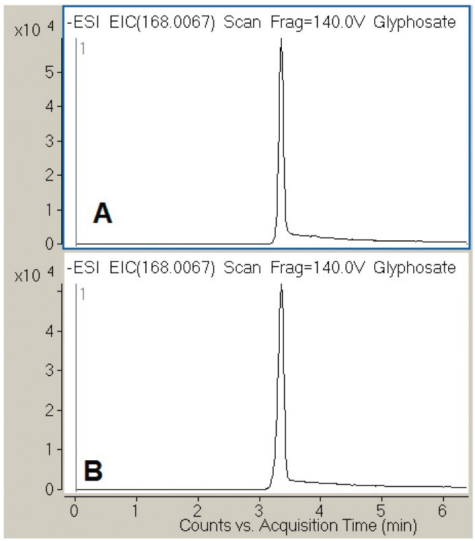
Glyphosate: Herbicide

ANP Retention of an Extremely Polar Compound



Glyphosate



Notes: Glyphosate is a nonselective herbicide and is used for the control of a wide range of weeds. It is strongly retained on soil components and due to its long half life and solubility in water can be detected long after application or far away from the application site.

Method Conditions

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

Catalog No.: 70000-15P-2

Dimensions: 2.1 x 150 mm

Solvents: A: DI H_2O + 5 mM ammonium acetate
B: 90% acetonitrile/ 10% DI H_2O/ 10 mM ammonium acetate

Gradient:

time (min.)	%B
0	80
1	80
1.1	5
5	5
6	80

Post Time: 5 min

Flow rate: 0.5 mL/min

Detection: ESI – neg - Agilent 6210 MSD TOF mass spectrometer

Sample: Sample stock solution was purchased from Sigma (1000 mcg/mL). Sample for analysis was made by diluting the stock 1:100 in 30:70 solution A and B

Peaks: 1. Glyphosate: 168.0067 m/z $(M-H)^-$
Figure A: injection #1, RT = 3.365 min
Figure B: njection #5, RT = 3.366 min

Discussion

A reliable method for the determination of glyphosate is presented. Analysis was performed using a Cogent Diamond Hydride HPLC column which provides very reproducible retention and fast equilibration even when a gradient analysis is used. The use of LC-MS detection allows avoiding time consuming derivatization of this compound which is lacking a chromophore for UV detection. The method shown, with ANP retention avoids derivatization, which is required when an ordinary C18 column is used.

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