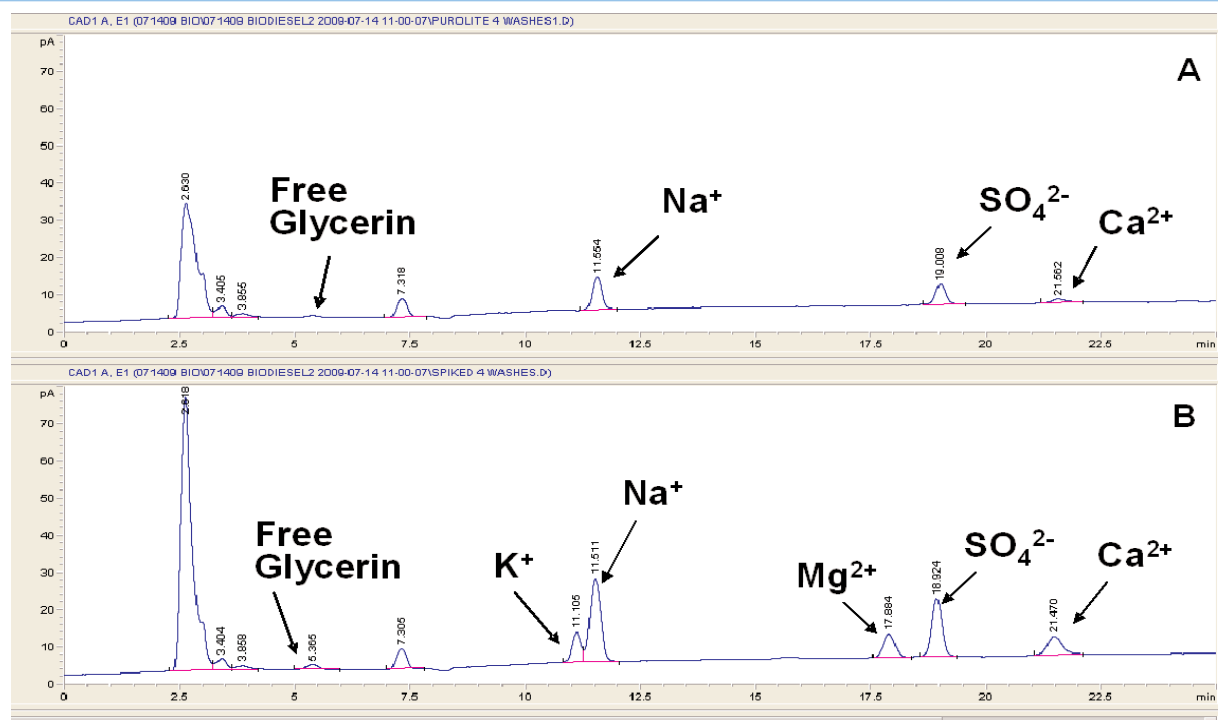


Ions in Biodiesel



A: Chromatogram of an aqueous extraction of a purified fatty acid methyl ester solution representative of a sample of Biodiesel or B100. (Calculated impurities free glycerin 19ppm, Sodium 1.1ppm, and Sulfate 2.4ppm). **B:** Chromatogram of the sample solution spiked with common impurities tested in biodiesel. (free glycerin 0.04%, Potassium 3.8ppm, Sodium 6.8ppm, Magnesium 4.0ppm, Sulfate 16ppm, and Calcium 6.2ppm).

Conditions

Column: HILIC 5 μ m 150x4.6mm
 Mobile Phase A: 200mM Ammonium Formate pH=3.2, Acetonitrile, Methanol, Isopropanol (15:75:5:5)
 Mobile Phase B: 200mM Ammonium Formate pH=2.75, Acetonitrile, Methanol, IPA (50:25:20:5)
 Flow Rate: 0.5mL/min
 Injection Vol: 50 μ L
 Corona CAD: 100 pA; Filter = Medium

Extraction Method: 25mL of Biodiesel was added to a 125mL separatory funnel. 5mL of 100mM ammonium formate pH=3 was added and shaken vigorously. The bottom layer was removed after 10 minutes. The process was repeated 3 more times. Four aliquots were combined and ~ 600 μ L was filtered using a centrifuge tube filter (0.22 μ m Nylon). 200 μ L of filtrate was added to 800 μ L of mobile phase A prior to analysis.

Time (min)	Mobile Phase B (%)
0	10
2	10
20	75
24	75
26	10