PFAS Analysis in Water Samples using LC/MS/MS Large-Volume Direct Injection

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Overview¹
Human exposure to PFAS residues has been implicated in the incidence of cancer, obesity, endocrine system disruption, and other adverse health effects. In recognition of these potential risks, sources of human exposure to these chemicals (e.g., via drinking water) are receiving public and scientific attention.

This application note presents a method for the quantitation of per- and polyfluorinated alkyl substances (PFASs) in water samples. Presented here utilizes dilution of a water sample in methanol and direct injection of 950 μL of the diluted sample using a 17.5 minute HPLC gradient. The method achieved accurate quantitation at levels of approximately 1-10 ng/L for more than 17 PFASs. Water samples were obtained anonymously from various sources in the United States. Samples were stored in the dark at 4 °C in 250 mL high density polyethylene bottles until analysis. A Phenomenex Luna® 5 μm C18(2) 30 x 2 mm column (00A-4252-B0) was installed between the pump mixing chamber and the column, outside of a column oven. This column served as a delay or hold-up column to isolate PFAS contamination originating from the pumps and eluents.

Acknowledgement
Phenomenex acknowledges Test America (Sacramento, CA) for collaborating with SCIEX and Phenomenex to contribute this application.

Reference
1. For complete application including Mass Spec parameters and sample prep steps, please refer to: “Quantitation of PFASs in Water Samples using LC/MS/MS: Large-Volume Direct Injection and Solid Phase Extraction” at www.Sciex.com

10 ng/L spike into groundwater matrix diluted with methanol
## Ordering Information

### 3 μm Microbore, Minibore and MidBore™ Columns (mm)

<table>
<thead>
<tr>
<th>Phases</th>
<th>SecurityGuard™ Cartridges (mm)</th>
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</thead>
<tbody>
<tr>
<td>Luna® C18</td>
<td>00B-4439-A0 00F-4439-A0 00A-4439-B0 00G-4439-B0 00D-4439-B0 00F-4439-Y0 00B-4439-Y0 00D-4439-Y0 00F-4439-Y0 AJ0-7596</td>
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</tbody>
</table>

### 5 μm Microbore and Minibore Columns (mm)

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<tr>
<td>Luna® C18</td>
<td>00B-4252-A0 00F-4252-A0 00A-4252-B0 00G-4252-B0 00D-4252-B0 00F-4252-Y0 00B-4252-Y0 00D-4252-Y0 AJ0-4286</td>
</tr>
</tbody>
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If Luna analytical columns do not provide at least an equivalent separation as compared to a competing column of the same particle size, similar phase and dimensions, return the column with comparative data within 45 days for a FULL REFUND.

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