

## SFC-TOF-MS for separation of isomers of branched perfluorinated sulfonates and carboxylates

Engdawork Admasu<sup>1</sup>, Gerd Vanhoenacker<sup>2</sup>, Frederic Lynen<sup>1</sup>, Claudio Brunelli<sup>3</sup> and Pat Sandra<sup>1,2,\*</sup>

<sup>1</sup>Pfizer Analytical Research Centre, Ghent University, Krijgslaan 281, B-9000 Ghent, Belgium

<sup>2</sup>Research Institute for Chromatography, Kennedypark 26, B-8500 Kortrijk, Belgium

<sup>3</sup>Pfizer Global R&D, Analyt R&D, Sandwich CT13 9NJ, Kent, England

Presentation : Poster

Name of presenter: Engdawork Admasu ([engdawork.engda@Ugent.be](mailto:engdawork.engda@Ugent.be), [aengd@yahoo.com](mailto:aengd@yahoo.com) )

\*Corresponding author: Prof. Pat Sandra ([pat.sandra@richrom.com](mailto:pat.sandra@richrom.com) )

### Abstract

Two primary classes of perfluorinated acids are perfluorinated sulfonates: perfluorooctane sulfonate (PFOS) and perfluorinated carboxylic acids: perfluorooctanoate (PFOA, C8 acid). They are generally the most prominent perfluorinated contaminant in biological samples from around the world. In this study reversed phase and chiral columns were evaluated for the separation of isomers of branched perfluoroalkyl compounds using SFC-MS-TOF. On Cellulose tris (4-methylbenzoate) stationary phase using MeOH/H<sub>2</sub>O (5 %)/ NH<sub>4</sub>HCO<sub>2</sub> (10 mM)/CO<sub>2</sub> mobile phase fast baseline separation of the isomers of Perfluoro-3-methylheptane sulfonate (P3FOS), Perfluoro-3-methylheptanoic acid (P3FOA), Perfluoro-4-methylheptane sulfonate (P4FOS), Perfluoro-4-methylheptanoic acid (P4FOA), Perfluoro-5-methylheptane sulfonate (P5FOS), and Perfluoro-5-methylheptanoic acid (P5FOA) in isocratic mode was developed with potential for related isomers.

**Key words:** sulfonic acid isomers, PFOS, PFOA, Cellulose-3, SFC, MS-TOF