



Optimizing Test Methods for Evidence of PFAS Biomagnification in Mammalian Serum

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Per- and polyfluoroalkyl substances (PFAS) are contaminants that have been found to be present throughout the environment. They present a complex challenge due to their persistence, stability, and widespread use in various products. Their resistance to degradation means they can accumulate in the environment and in organisms, including humans, over time. Governments and environmental agencies around the world have been implementing stricter regulations and guidelines to limit the production, use, and release of PFAS into the environment. These regulations often include restrictions on the manufacture and importation of PFAS-containing products, as well as requirements for industries to monitor and report their PFAS emissions. Additionally, there may be guidelines for the treatment and disposal of PFAS-containing waste to prevent further contamination of soil and water.

The bioaccumulation and biomagnification potential of PFAS compounds mean that even low levels of exposure can build up in organisms, potentially leading to adverse health consequences. These can manifest in the liver, immune system, and endocrine system. Such health risks underscore the importance of monitoring PFAS levels within serum. During this presentation, AGAT will provide an overview of the process involved with validating and optimizing our method as well as some informative data on levels we have observed thus far.

Desiree Hui

Desiree Hui, B. Sc. joined AGAT Laboratories in August 2021 as the Forensics and High Resolution Specialty Chemistry Manager working out of the Forensics location in Calgary, Alberta. Desiree has 9+ years of experience as a Supervisor running a Special Chemistries Clean Lab specializing in Dioxins, PCBs, and other POPs in various matrices by HRMS. Desiree then spent 8+ years running a Fuels and Lubricants instrumentation department for the government of Alberta, the department specialized in Fuel Quality and providing analytical testing to confirm ASTM and CGSB Fuel Specifications. In addition to this Desiree was the Program Coordinator for the International Quality Assurance Exchange Program providing proficiency testing exchange samples to client's word wide. Throughout this time, Desiree has acquired extensive experience in method development, method setup, and maintenance and troubleshooting of various types of analytical instrumentation (HRMS, GCMS, GCMSMS, LCMS, LCMSMS, HPLC, FID, ECD, etc). She is also well versed in all levels of laboratory management from quality assurance to being a technical resource for clients in a large variety of sample types and applications inclusive of both Canadian and International projects.