perchorate exchange experiment, electrodes were regenerated in situ with a controlled potential. The removal efficiency of perchlorate can retain about 80% for thirty times regeneration.

175. Immunoassays of Phosphorylated Cholinesterase as Biomarkers for Rapid Diagnosis of Exposure to Organophosphorous Agents

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Numerous analysis methods for effectively monitoring neurotoxic organophosphates (OPs) have been developed to assess OP exposures. Biomonitoring of OP exposures is recognized to be one of the best approaches. Among these, enzyme linked immunosorbent assay (ELISA) and Western blot (WB) methods are simple, rapid detection methods for biomarkers. In this work, we used ELISA and WB methods to find specific antibodies for phosphorylated acetylcholinesterase (OP-AchE) and bcetylcholinesterase (OP-BchE) and evaluate their specificity and sensitivity for rapid diagnosing the exposure to OP agents. Our results indicate that anti-phosphoserine antibody can specifically bind to OP moiety of phosphorylated ChE and don't bind to unmodified ChE. Furthermore, couples the AchE or BchE antibody with anti-phosphoserine antibody can be used for direct detecting OP-AchE or OP-BchE that prepared with paraoxon as an OP model agent with sandwich immunoassay method. Low detection limit were obtained. Such immunoassay holds great promise as a simple, selective and sensitive for the effective biomonitoring and diagnosis of potential exposures to OP agents.

Reference:
[1] Hua Wang, Jun Wang, Charles Timchalk, and Yuehe Lin. Magnetic Electrochemical Immunoassays with Quantum Dot Labels for Detection ofPhosphorylated Acetylcholinesterase in Plasma. Anal. Chem. 2008, 80, 8477–8484.

176. Mobile On-Line Air Quality Monitoring in the Seattle-Tacoma Airshed Using Portable Membrane Introduction Tandem Mass Spectrometry

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We have modified a quadrupole ion trap GC-MS/MS system for use as an on-line air monitoring platform for volatile and semi-volatile (VOC and SVOC) molecules using a capillary hollow fibre semi-permeable membrane introduction interface. Continuous on-line quantitation of target analytes is achieved using an in-line permeation tube for the continuous infusion of a deuterated internal standard. VOC/SVOCs derived from vehicle exhaust (BTEX, naphthalene) and tracer molecules for woodsmoke (2-methoxyphenol) were monitored over a multi-day excursion in Tacoma, WA during a large-scale air mass inversion in January, 2009. Measurements were made from moving vehicle(s) that drove prescribed routes around fixed locations and a central monitoring site. Concurrent measurements of PM2.5 (nephelometry) and particle soot absorption photometry were collected adjacent to various fixed sites in an effort to better understand the extent to which fixed site regulatory monitors reflect concentrations of air toxics in the surrounding community. Interim results of spatially and temporally resolved data will be presented that indicate influences from both specific and diffuse sources, including wood burning and major traffic events.