

DTSC Laboratory Update

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Report to Scientific Guidance Panel

Oakland

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CDC Cooperative Agreement

- **All Personnel on board:**

- Dr. Suhash Harwani
- Dr. Tan Guo
- Dr. Sissy Petropoulou

- **Equipment:**

- LC-MS installed, training this month
- More automation modules added, tested

Validated Methods

- **Polybrominated Diphenyl Ethers (PBDEs)**
- **Polychlorinated Biphenyls (PCBs)**
- **Organochlorine Pesticides (OCPs)**
 - DDT, DDE, HCB, HCH, chlordane metabolites
- **Perfluorinated Chemicals (PFCs)**

Method Development with GC-HRMS

- **Brominated flame retardants (BFRs)**
 - PBT (pentabromotoluene)
 - PBEB (pentabromoethylbenzene)
 - HBB (hexabromobenzene)
 - DBDPE (decabromodiphenylethane)
 - DPTE (2,3-dibromopropyl-2,4,6-tribromophenyl ether)
 - α,β -TBECH (1,2-dibromo-4-(1,2-dibromoethyl) cyclohexane)

Method Development with New LC-MS

- **Brominated flame retardants (BFRs)**
 - TBBPA (Tetrabromo bisphenol A)
 - TBB (2-Ethyl-1-hexyl-2,3,4,5-tetrabromobenzoate)
 - TBPH (Bis(2-ethyl-1-hexyl) tetrabromo phthalate)
 - BTBPE (1,2-Bis(2,4,6-tribromophenoxy)ethane)
- **Conversion of method from GC to LC:**
 - Safety
 - Hydroxy-PCB and PBDE metabolites
 - Environmental phenols (e.g., BPA, triclosan)
 - New LC method being tested

Method Development for Sample Collection

- **Samples from 11 volunteers**
 - analyzed for lipids, OCPs, PCBs, PBDEs, PFCs, BFRs
- **Type of tube**
 - *Red-top* tube requiring centrifuging and processing in the field
 - *Serum separator tube* only requiring centrifuging
- **Time before processing**
 - 2 hr vs. 48 hr
 - 1 month vs. 2 yrs freezing

Work on MIEEP and FOX

- **Phase I**

- Sample aliquoting
- Analysis of lipids
- Analysis of PFCs

- **Phase II**

- Analysis of PCBs, OCPs, PBDEs

- **Phase III**

- Analysis of new BFRs