NTP
National Toxicology Program

Concept Review: Analytical Chemistry Support for NTP

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Background:

- NTP has had analytical chemistry support contracts since the inception of the Program at NIEHS
- Current contracts have been in place in their present form (with updating) for nearly 15 years
- Support activities include specific tasks in each of the following areas:
  - Logistics – Chemical procurement and shipping
  - Chemical Characterization
  - Dose Formulation Development
  - Biological Sample Analysis
  - Toxicokinetics Studies with Unlabeled Compounds

Types of Analytical Techniques Used:

- IR, NMR, MS, MS/MS, XRD
- Chromatographic Analyses - HPLC, GC, IC, TLC – all detectors (organics)
- Thermal Analysis – TGA, DSC
- Inductively Coupled Plasma – AES, MS (inorganics)
- Nanomaterial characterization - Particle size, BET, Zeta Potential
- Physical Constants Determination (mp, bp, density, vapor pressure)
- Elemental Analysis
- Water Determination
- Functional Group Titration

Program Areas Supported:

- Complete chemistry (Procurement, Characterization, Dose formulation, Dose analysis, Biological sample analysis, Shipment)
  - Reproductive toxicity
  - Developmental toxicity
- Support for study labs with their own chemistry facilities
  - Carcinogenicity
  - General toxicity
- Procurement and shipping only
  - Genetic Toxicity
- "Special" support
  - Interagency projects, DIR projects, HTS

Request:

Analytical chemistry using accurate and robust methods for the characterization of test articles, formulation and analysis of dosage preparations, and measurement of test articles and metabolites in biological matrices is critical to the scientific integrity of NTP studies. Furthermore, logistical activities (purchasing test articles and shipping test articles, formulations, and samples) coordinated with other NTP contract laboratories is vital to the productivity of the Program as a whole.

NTP seeks the BSC's approval for continuing this type of activity using contract mechanisms.