NTP
National Toxicology Program

NTP and NIEHS Investigative Research Support Contract

Concept Review

Board of Scientific Counselors

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Concept Review

- Review of general project purposes

- Overall value and scientific relevance for fullfilling the program's goal of protecting public health

History

- Currently entitled: Molecular Oncology and Toxicology Support Contract
- Consolidation of 3 contracts
  - Transgenic & National Center for Toxicogenomics
  - Genotyping
  - Molecular oncology
- Genetic Alterations in Cancer (GAC) Database

NTP and NIEHS Investigative Research Support Contract

Purpose:

To provide scientific support primarily by conducting *in vivo*, *in vitro* and retrospective investigative research projects for NTP and NIEHS investigators.

Purpose

- conducting mechanistic studies
    - toxicology & carcinogenesis studies
- breeding/housing of SPF and non-SPF animals
- characterizing animal models
- molecular biology support

Purpose

- biomarker development & applications
- arranging workshops
    - immunopathology, embryology, repro…
- maintain GAC database

Projects: 2003-2007

- ~ 40 different NTP & NIEHS investigators
  - intramural and extramural collaborations
- ~ 140 different projects (35 last year)
  - support of NIEHS and NTP missions

Past and ongoing investigations

- Toxicogenomics of liver & heart
  - Nat'l Center for Toxicogenomics
  - NTP
  - phenotypic anchoring

- Genetically Modified Models (GMM)
  - TgAC, $P53^{+/-}$ and $p16/19^{+/-}$ (& ~ 15 others)
  - screen for non-responder TgAC
  - genotyping and phenotyping

Past and ongoing investigations

- new biomarkers of toxicity (i.e. troponin)
- pulmonary disease
- MRI imaging in liver carcinogenesis
- AhR mediated neurotoxicity in developing brain
- gene expression in liver slices exposed to perfluorinated chemicals
- host susceptibility initiatives

Some noteworthy findings

- Hepatic gene expression profiles vary by type of hepatoxin, time of day, and liver lobe
- Hair follicle stem cell gives rise to skin tumors in TgAC and other mice
- CAR receptor required for liver cancer
- NAG-1, COX2 & NSAIDS influence colon cancer in APC^{min} mice
- Gene expression patterns in whole blood are influenced by liver injury