Pathology of Inhalation Studies

With over 30 years of experience and the successful completion of innumerable specialized studies, Charles River provides the largest and most experienced inhalation toxicity team in the contract research industry.

**Capabilities**
- Experienced pathologists
- Inhalation/respiratory specialists
- Necropsy and histology
- Light and electron microscopy
- Image analysis
- Experience with rodent and nonrodent species
- GLP compliance
- Peer review
  - Internal
  - External
- Protocol design and consulting

**Process**
The complete and adequate interpretation of data and the production of a final report begin at necropsy with the application of species and study-specific procedures. The process then continues with specialized histological processing methods and concludes with the examination of respiratory tract tissue sections by pathologists long experienced in these studies and their particular intricacies.

**Necropsy**
At the time of necropsy, bronchoalveolar lavage can be performed. Respiratory tract tissues are collected at necropsy according to custom designed protocols. Charles River has developed procedures for tissue collection, infusion fixation and subsequent handling to ensure all appropriate examinations are optimized. Procedures for enzyme histochemistry, immunohistochemistry and electron microscopy (EM) can also be undertaken as required.

**Histology**
The complete examination of respiratory tract tissues requires nonroutine procedures for preparing histological sections. Our trimming, embedding and sectioning procedures ensure that the essential specific and localized sites most susceptible to toxic effects are presented to the pathologist for examination. A full examination of nasal cavities, nasopharynx, larynx, trachea, carina, bronchi and lungs, together with associated structures and draining lymph nodes, is considered routine at our facilities. Special stains can be applied as necessary to reveal particular changes. Standardized preparation of specimens for histomorphometric quantitative image analysis may also be deployed if required.
Histopathology
Our team of pathologists is highly experienced in interpreting the pathological findings that are typically found in inhalation studies. While inhalation studies may produce dramatic pathological changes, it is more common to find subtle and discrete toxic changes in the respiratory tract. Charles River has highly skilled scientific staff who take pride in both understanding the pathology of a test article and delivering a full explanatory report at the conclusion of each study.

Our pathologists are always available for discussions on issues ranging from study design to final interpretation of results. We welcome the opportunity to work with you through all stages of an inhalation toxicity or carcinogenicity study to ensure its success.