

**QUANTITATIVE HISTOLOGY AND CYTOCHROME
P-450 IMMUNOCYTOCHEMISTRY OF THE LUNG
PARENCHYMA FOLLOWING 6 MONTHS
OF EXPOSURE OF STRAIN A/J MICE
TO CIGARETTE SIDESTREAM SMOKE**

Kent E. Pinkerton

Department of Anatomy, Physiology, and Cell Biology, School
of Veterinary Medicine, University of California, Davis, California,
USA

Janice L. Peake, Imelda Espiritu, Michael Goldsmith

Institute of Toxicology and Environmental Health, University
of California, Davis, California, USA

Hanspeter Witschi

Department of Molecular Biosciences, School of Veterinary
Medicine, University of California, Davis, California, USA

Male strain A/J mice were exposed for 6 h/day, 5 days/wk to aged and diluted cigarette
sidestream smoke (ADSS) at a chamber concentration of 4 mg/m³ of total suspended par-
ticulate matter (TSP). After 6 mo, the lungs were examined for altered expression of
cytochrome P-450 isozymes and for differences in total alveolar tissue volume or surface
area, as well as changes in the numbers of epithelial type II cells and alveolar
macrophages. Morphologic measurements showed no statistically significant differences for
the air, alveolar tissue, or capillary volumes of the lungs or changes in the total number of
epithelial type II cells or alveolar macrophages. In contrast, cytochrome P-4501A1 was
elevated in the lungs of ADSS-exposed animals and localized in capillary endothelial cells.
X CYP2B1 was present in airway epithelial cells as well as in epithelial cells throughout the
lung parenchyma, but its distribution was not changed by ADSS exposure. Isozyme
X CYP2E1 was also found in airway epithelial cells, but not in the lung parenchyma, with
no differences noted between ADSS exposed animals and controls. CYP2F2 was found in
the bronchiolar Clara cells and in type II cells located within the alveolar parenchyma, but
was also unchanged. It is concluded that chronic exposure to cigarette ADSS at 4 mg/m³
of TSP produces no changes in alveolar macrophages or epithelial type II cells in mouse
lung but increases the expression of cytochrome P4501A1.

mutative
metab.

Redford 302

CYP 1A1

CYP 2D6

B(a)P induction

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Address correspondence to Hanspeter Witschi, MD, ITEH, University of California, Davis, CA
95616, USA.

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CYP2D6: NUK

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