

ABSTRACT

EXPERIMENTAL SKIN AND LUNG CARCINOGENESIS USING TOBACCO
SMOKE AND ITS PARTICULATE MATTER: A COMPARISON OF TECHNIQUES

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It has been shown epidemiologically that tobacco smoking is causally related to cancers of the lung and larynx and that both smoking and chewing of tobacco are related to cancer of the upper alimentary tract. The objective of experimental tobacco carcinogenesis has been to confirm these findings experimentally and assay the specific agents in tobacco smoke and its particulate matter that contribute to carcinogenic activity.

So far, it has not been possible to induce squamous cell cancer in the bronchial epithelium when tobacco smoke and tobacco "tar" are deliberately applied to the respiratory tract of laboratory animals. However, tobacco smoke condensate has been shown to be carcinogenic and sarcogenic to a variety of other tissues and animal species. Tobacco extract has also been found to be an active tumor promoter and, by some investigators, to be sarcogenic to mouse skin. The difficulties encountered in experiments involving the direct application of tobacco smoke condensate to the respiratory epithelium and the problems with active and passive inhalation techniques will be discussed.

Other questions raised in this discussion consider if mouse skin studies can be related to studies on the respiratory epithelium, the feasibility and usefulness of long-term experiments involving the respiratory epithelium of animals, and the extent to which animal and related chemical studies can be applied to Man.

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