

This Week's Citation Classic®

Salley J J. Experimental carcinogenesis in the cheek pouch of the Syrian hamster.

J. Dent. Res. 33:253-62, 1954.

[Division of Dental Research and Department of Pathology, University of Rochester School of Medicine and Dentistry, NY]

Cheek pouches of Syrian hamsters received topical application of three polycyclic hydrocarbon carcinogens: methylcholanthrene, benzopyrene, and 9,10-dimethyl-1,2 benzanthracene (DMBA). After 24 to 30 weeks, all animals receiving DMBA had squamous cell carcinomas in the oral epithelium of the treated pouches and a large number exhibited metastatic nodules in the regional lymph nodes. [The *SCI*® indicates that this paper has been cited in over 150 publications since 1955.]

John J. Salley

Center for Innovative Technology
Hallmark Building
Suite 201
13873 Park Center
Herndon, VA 22071

February 13, 1987

The work identified as a *Citation Classic* constituted the initial part of my doctoral dissertation in the field of experimental pathology. It may be cited frequently in the literature because the article reported for the first time the experimental induction of squamous cell carcinoma in the oral epithelium of experimental animals using topical application of polycyclic aromatic hydrocarbons.

This research was prompted by a strong clinical interest in malignant diseases occurring in the oral mucosa of humans. With basically no prior work to be reviewed, I spent a fair

amount of time reviewing the state of the art in the chemical induction of carcinoma of the skin, or epidermis, in mice and other experimental animals. The method I then used followed very closely the classical methodology to induce skin cancer in rodents. While there had been one or two attempts to use the skin-cancer induction methodology on oral mucosa of mice and rats, these experiments were not successful, most likely because of refractory responses due to the species used.

The animal chosen for my study was the Syrian hamster. It was selected for two reasons: (1) this species possesses a blind pouch that communicates with the oral cavity and is lined by oral epithelium, which is readily accessible for frequent gross examinations; (2) a number of other studies under way within the dental research group at Rochester were related to dental caries and periodontal disease in hamsters. Thus, there was a ready and inexpensive supply of these animals available, and needless to say, the expense factor is always important to a graduate student with limited funds at his or her disposal.

I received the first Novice Award, now known as the Hatton Award, from the International Association for Dental Research after my presentation of the study before that group at its annual meeting in Philadelphia in 1953. [See references 1 and 2 for recent papers on this subject.]

1. Hassan M M A, Shklar G, Solt D & Szabo G. Acute effect of DMBA application on mitotic activity of hamster buccal pouch epithelium. *Oral Surg. Oral Med. Oral Pathol.* 59:491-8, 1985.

2. Shklar G, Ninkian K, Hassan M & Herboza E G. Effects of smokeless tobacco and snuff on oral mucosa of experimental animals. *J. Oral Maxillofac. Surg.* 43:80-6, 1985.

CC/LS

1A15