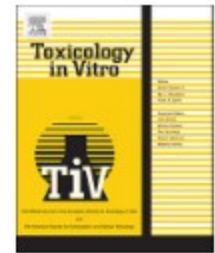




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## Toxicology in Vitro

journal homepage: [www.elsevier.com/locate/toxinvit](http://www.elsevier.com/locate/toxinvit)



### Review

# Mimicking cigarette smoke exposure to assess cutaneous toxicity

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### ARTICLE INFO

#### Keywords:

Cigarette smoke  
Skin models  
Inflammation  
Oxidative stress  
Psoriasis  
Atopic dermatitis

### ABSTRACT

Cigarette smoke stands among the most toxic environmental pollutants and is composed of thousands of chemicals including polycyclic aromatic hydrocarbons (PAHs). Despite restrict cigarette smoking ban in indoor or some outdoor locations, the risk of non-smokers to be exposed to environmental cigarette smoke is not yet eliminated. Beside the well-known effects of cigarette smoke to the respiratory and cardiovascular systems, a growing literature has shown during the last 3 decades its noxious effects also on cutaneous tissues. Being the largest organ as well as the interface between the outer environment and the body, human skin acts as a natural shield which is continuously exposed to harmful exogenous agents. Thus, a prolonged and/or repetitive exposure to significant levels of toxic smoke pollutants may have detrimental effects on the cutaneous tissue by disrupting the epidermal barrier function and by exacerbating inflammatory skin disorders (i.e. psoriasis, atopic dermatitis). With the development of very complex skin tissue models and sophisticated cigarette smoke exposure systems it has become important to better understand the toxicity pathways induced by smoke pollutants in more realistic laboratory conditions to find solutions for counteracting their effects. This review provides an update on the skin models currently available to study cigarette smoke exposure and the known pathways involved in cutaneous toxicity. In addition, the article will briefly cover the inflammatory skin pathologies potentially induced and/or exacerbated by cigarette smoke exposure.