

PubMed

## Abstract

[Full text links](#)ELSEVIER  
FULL-TEXT ARTICLE

*Int Immunopharmacol.* 2011 Nov;11(11):1691-6. doi: 10.1016/j.intimp.2011.05.028. Epub 2011 Jun 15.

# The effect of nano-silver on the activation of nasal polyp epithelial cells by *Alternaria*, Der P1 and staphylococcal enterotoxin B.

Shin SH<sup>1</sup>, Ye MK.

## Author information

### Abstract

Nano-silver is used for its anti-bacterial, anti-viral and anti-fungal properties. The aim of this study was to investigate the potential clinical efficacy of nano-silver for its anti-inflammatory effect on respiratory epithelial cell inflammation. Primary nasal polyp epithelial cells (NPECs) were exposed to *Alternaria alternata*, Der P1, and staphylococcal enterotoxin B for 48 h with or without various concentration of nano-silver, then the supernatants were collected. Cell cytotoxicities were measured using a CellTiter-96® aqueous cell proliferation assay kit. The interleukin (IL)-6, IL-8 and granulocyte-macrophage colony stimulating factor were measured to evaluate the inflammatory effects on the epithelial cells. Nuclear factor-κB (NF-κB) and activator protein-1 (AP-1) were analyzed using western blot and ELISA method. Cell survival was found to be significantly decreased at nano-silver concentrations exceeding 10 ppm. *Alternaria*, Der P1 and SEB activated NPECs with increased cytokine production. *Alternaria* induced NPECs not inhibited by nano-silver. However, Der P1 and SEB induced cytokine production was significantly affected by concentrations over 1 ppm. *Alternaria*, Der P1 and SEB enhanced nuclear NF-κB expression and nano-silver inhibited NF-κB expression in SEB and Der P1 treated group. Although nano-silver is cytotoxic at higher concentrations, at safe concentrations it can inhibit the activation of NPECs. This finding suggests a

novel pharmacological rationale for the treatment of airway inflammation and/or immunological disease.

Copyright © 2011 Elsevier B.V. All rights reserved.

PMID: 21683166 [PubMed - indexed for MEDLINE]

---

**Publication Types, MeSH Terms, Substances**

---

**LinkOut - more resources**

---

**PubMed Commons**

[PubMed Commons home](#)

0 comments

[How to join PubMed Commons](#)