

# Additional Mechanism of Action Found for Oxymetazoline

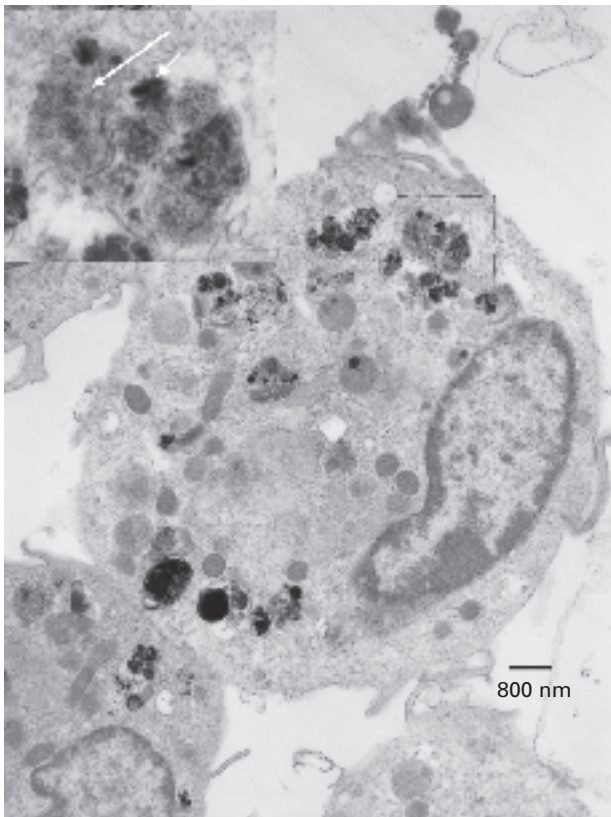
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Millions of people – suffering from colds and a runny nose – self-medicate with a diversity of nose sprays known from advertisements. One of these preparations (Nasivin) contains oxymetazoline as active ingredient. The patients are using the well-known property of oxymetazoline to reduce swelling of mucous membranes. In addition, a significant antiviral and anti-inflammatory effect has been observed in in-vitro studies.

In a study supported by Merck Selbstmedikation GmbH, Darmstadt, a research group from the GSF-Institute for Inhalation Biology found that oxymetazoline inhibits the release of inflammatory promoting signal substances in alveolar macrophages, the phagocytic cells of the immune system, and at the same time promotes synthesis of anti-inflammatory signal molecules. Oxymetazoline was also able to markedly reduce the oxidative burst elicited experi-



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Electronmicroscopic image of an alveolar macrophage, taken up agglomerates of ultrafine carbon particles within 1 h in its phagolysosomes.

mentally in the cells by the treatment with ultrafine carbon particles. The oxidative burst is the result of reactions to produce highly reactive oxygen radicals in the cell for chemical detoxification; but it also represents an immense oxidative stress for the cell.

These new studies are very interesting because they show that oxymetazoline possesses not only decongestant properties but in addition is able to inhibit the inflammatory response and the oxidative stress occurring during a cold. Studies will continue in order to increase our understanding of these findings.

#### Literature:

- Beck-Speier, I. et al.: J. Pharmacol. Exp. Therap. 31, 843-851 (2006)