

Influence of coenzyme Q10 on the proliferation and differentiation of endothelial cells

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SUMMARY

Background: Coenzyme Q 10 (Co Q10)* is vital for regulating cell metabolism and cell proliferation. The controlled proliferation of cells is a prerequisite for the regeneration of tissues.

Aim: The aim of this study was to clarify whether homeopathically processed Co Q10 has an influence on the proliferation, differentiation and division rate of endothelial cells *in vitro*.

Methods: In determining cell numbers, the influence of Co Q10 on the proliferation of endothelial cells taken from the human umbilical vein was examined. The growth fraction of confluent endothelial cells was determined by measuring the intake of the base analogue bromodeoxyuridine (BrdU). In testing for differentiation, the expression of von Willebrand factor - the marker protein typical of endothelial cells - was observed while Co Q10 was present. A flow cytometer was used for the analysis.

Results: Co Q10 caused an increase in the proliferation of growing endothelial cells. By contrast, Co Q10 had no influence on the rate of incorporation of BrdU into confluent, contact-inhibited endothelial cells. In the case of dedifferentiated cells incubated with Co Q10, no increase in the expression of von Willebrand factor was observed, either.

Conclusion: Homeopathically processed Co Q10 has a stimulating influence on the proliferation of cells *in vitro*. This stimulating influence, however, does not extend to the redifferentiation process. Co Q10 has no effect on the low division rate of confluent, contact-inhibited endothelial cell cultures.

* Also known as Ubichinonum

The antiviral effect of Euphorbium compositum

by Dr. B. Glatthaar-Saalmüller, M. Borner, M. Weiser • Reprint from Biol. Med. Vol. 31 (4), (2002), pp. 194-5

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Euphorbium compositum nasal spray, antiviral action, parainfluenza viruses, adenoviruses

SUMMARY

Euphorbium compositum Nasal Spray has proved effective against the common cold of varied origins. Since most infections of the upper respiratory tracts are due primarily to a virus it was obvious to investigate whether the effectiveness of this homeopathic combination preparation can be explained by its antiviral action. It has now been possible to provide proof *in vitro* that the parainfluenza virus type 2 is inhibited by Euphorbium compositum. However, no antiviral effect could be detected against adenovirus5.

The homeopathic combination preparation Euphorbium compositum Nasal Spray SN (Biologische Heilmittel Heel GmbH, Baden-Baden, Germany) is indicated as a treatment for rhinitis of varied origins. It serves as auxiliary treatment for atrophic rhinitis and chronic sinusitis and facilitates nasal respiration. The Nasal Spray contains the following pharmaceutically active components in quantities of 1 g per 100 g:

- **Euphorbium D4 (4X)** for the treatment of inflammation of the respiratory tract, in particular the upper airways; such as rhinitis or sinusitis;
- **Pulsatilla D2 (2X)** (wind flower) for the treatment of inflammation of the respiratory tract and proneness to colds, conjunctivitis, inflammation of the middle ear, headaches and nervous complaints;
- **Luffa operculata D2 (2X)** (sponge) effective against the common cold and hay fever;
- **Mercurius bijodatus D8 (8X)** (mercury iodide) for the treatment of (suppurative) inflammation of the mucous membranes of the nose, throat, tonsils and eyes;
- **Hepar sulfuris calcareum D10 (10X)** (calcium sulphide) for the treatment of inflammation and suppuration of the mucosa and chronic inflammation of the middle ear and tonsillar abscesses, and also for the treatment of a lymphatic predisposition and nervous hypersensitivity
- **Argentum nitricum D10 (10X)** (silver nitrate) effective against migraines.