

## Development and Efficacy Evaluation of Topical Preparations for Nail Disorders

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This presentation proposes an overview of the development and testing of effective treatment for nail disorders, in particular onychodystrophy that is an alteration of the tropism of the nail, due to systemic and local causes. Topical treatment avoids adverse effects associated with systemic therapy. However, the effectiveness of topical therapies is limited because of the poor permeability of the lamina to the therapeutic agents applied.

In fact, it must be borne in mind that the nail is basically a tortuous twist of crystalline and amorphous fibrous proteins in which only small molecules pass through.

In recent years the research has mainly focused on improving transdermal permeability by chemical treatments, penetration enhancers, mechanical and physical methods. For this purpose, several “ex vivo” methods have been studied, including the use of bovine membranes as a human nail substitute for penetration studies.

The aim of recent works was to evaluate whether and to what extent such in vitro tests can correctly predict the in vivo fate of nail lacquers.

In the application of pharmaceutical lacquers used to treat nail alterations and fungal infections, the location of the film on the nail lamina and the transungueal passage of the active substance are the key factors.

Hence the importance of developing topical products with appropriate formulation both in terms of medical treatment and associated cosmetic treatment. In fact, the constant use of an inappropriate cosmetic formulation can severely compromise the effectiveness of medical treatment.

### Biography:

Dr. Paola Perugini, graduated in Pharmaceutical Technology and Chemistry (CTF) and in Pharmacy, earned her PhD in Pharmaceutical Technology and Chemistry in 1998. Now she is an associate Professor at the University of Pavia in which she teaches in Pharmacy and in CTF degree courses. Furthermore she is the Coordination of the Master Degree in “Cosmetological Sciences” at the University of Pavia from 2009-2010.

The main research activities of Perugini concerning pharmaceutical and cosmetic technology. The scientific work of Dr. Perugini has resulted in over 60 publications, 2 patents, more than 100 communications on topics of technology pharmaceutical and cosmetics.