

# International Conference and Exhibition on **Cosmetic Dermatology & Hair Care** December 07-08, 2015 Philadelphia, USA



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### **Skin processes in the light of integrative biology**

In the last few years, use of omics technologies has contributed to increase our knowledge in a wide range of skin processes. In particular, DNA microarrays is a powerful tool to identify hundreds of genes and assigning genes into functional networks remains an important challenge.

The modulation of a given gene is not by itself sufficient for understanding. Genes function in an orchestrated manner and their products may participate in distinct pathways. Regulatory mechanisms are complex and integrate positive and negative feedback loops, which may cloud and overshadow the global cellular impact. Moreover, whether the gene expression changes are result or causative of a pathological or physiological condition is difficult to determine. In both cases, the difficulty relies on the involvement of protective processes triggered by the cells in response to an alteration.

Another issue concerns the analyses of transcriptomic data from skin biopsies of different donors. Whereas the available statistical tools lead to determine common features among different groups, they tend to smooth the overall data to a point where the selected values will detect only the “tip of the iceberg”. Indeed, expression values among similar groups may not vary “by chance” but reflect, along with other subtle changes, specific features of one given donor. Rescuing genes from the “bottom of the iceberg” should provide a better stratification paving the way for personalized skin care, early diagnosis and development of targeted therapies.

In the present talk, these different issues will be illustrated through several case studies.

### **Biography**

Philippe Benech has completed his PhD from the Weizmann Institute of Science and postdoctoral studies from Harvard Medical School. He is director of research at the National Center for Scientific Research and is the recipient of several grants and awards. He was considered as a pioneer in the discovery of cytokine signaling pathways and developed PredictSearch, a text mining-based software dedicated to the interpretation of transcriptomic data. Founder of several biotechnology companies, he is presently CSO at the GENEX Laboratory devoted to cosmetogenomic analyses.

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