Editorial

R.

Schmidt

Valbonne, France

This issue of Skin Pharmacology is dedicated to a topic which has gained great importance in the last few years: the in vitro reconstruction of human skin.

After having mastered methods which allow serial cultivation of human epidermal keratinocytes, multilayered sheets of cultured keratinocytes were successfully used in the clinic to cover wounds, particularly those of patients with severe burns. Later, matrices were developed mostly based on collagen in order to reconstruct human skin in vitro, i.e., to comprise both the dermal and epidermal compartments. In addition to its clinical potential, reconstructed skin became an important tool in basic dermatological research and skin pharmacology.

Even though from a histological point of view, the reconstructed epidermis resembles in many models very much the in vivo situation, biochemical studies show clearly that it is far from being a complete image of it. Yet, the existing three-dimensional culture systems have proven in many experiments their potential as valid models in skin pharmacology. An important benefit from this development will eventually be a decreased use of animals in research.

The papers published in this issue are contributions from laboratories dedicated to the evaluation and improvement of reconstructed human skin. These articles are meant to give an overview of the present state of the art and, perhaps more importantly, to provide a solid foundation for further developments in this promising field.