UABDIVULGA
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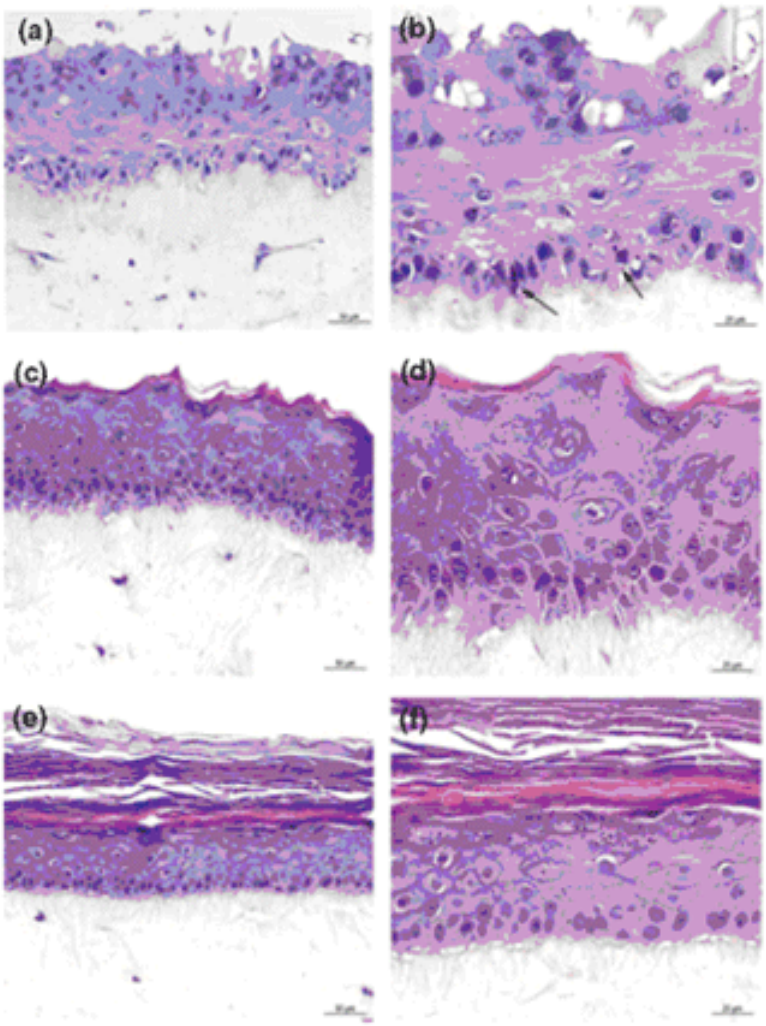
Artificial canine skin



Researchers at UNIVET, a spin-off of the Universitat Autònoma de Barcelona, in cooperation with the animal nutrition company Affinity Petcare, have developed an artificial cellular model which faithfully reproduces the characteristics of dog skin and which will allow, therefore, the carrying out of various lines of research related to skin biology and pathology without the need to use live animals.

The basic structure of skin consists of an external layer, the epidermis, and an internal layer, the dermis, separated by a basal membrane. A study of the interactions between the cell populations of the various layers is of vital importance for skin biology, but these interactions cannot be investigated adequately by means of conventional cell cultures.

Researchers at the UAB and UNIVET, in cooperation with Affinity Petcare, have developed an artificial canine skin model, very similar to normal skin, which is useful for research and which represents an alternative to the use of animals in research. The model allows the study of those illnesses which most often affect dogs' skin without the need to use animals.

To develop this model, cells from the epidermis (keratocytes) and the dermis (fibroblasts) from samples of healthy dogs were used. The dermis cells, inserted into a collagen marix (a very common protein in skin and joints), were used as a support for the epidermis cells, which were grown on its surface and were kept in growth conditions exposed to air. The cells proliferated forming the various layers of the epidermis.

The model develops a morphological structure similar to that of canine skin. Additionally, the expression of the dermis and epidermis proteins follows the same pattern of expression as that of normal canine skin, even forming a basal membrane, which also maintains the characteristics of conventional skin.

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