

Short Note on Skin

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Description

Skin is our body's largest sensory organ, with intricate features that allow it to send out warning signals when anything hurts." Every part of the skin is covered in sensors that detect environmental stimuli and actively measure their intensity.

Skin response is a good indicator of health. Pin pricks, for example, are used to assess the nervous system's response to determine the degree of paralysis caused by nerve injury.

Artificial skin receptors that can provide this type of feedback are critical for advances in healthcare and intelligent robots. The skin serves as a barrier between humans and their surroundings. It has an average weight of 4 kg and a surface area of 2m². It works as a barrier, shielding the body from the elements and preventing the loss of vital body components, particularly water. A death from destruction of skin, as in a burn, or in toxic epidermal necrosis. And the misery of unpleasant acne, remind us of its many important functions, which range from the vital into the cosmetic. The skin has three layers. The one is epidermis, which is firmly attached to, and supported by connective tissue in the underlying dermis. Beneath the dermis is loose connective tissue, the subcutis or hypo dermis, which usually contains abundant fat.

Langerhans cells

The langerhans cell is a dendritic cell like the melanocyte. It also lacks desmosomes and ton fibrils, but has lobulated nucleus, the specific granules within in the cell look like tennis racket when seen in two dimensions in an electronic micrograph. Langerhans cells have key role in many immune reactions, they take up exogenous antigen. Process it and present it to T lymphocytes either in the skin or in the local lymph nodes. They probably play a part in immune surveillance for viral and tumor antigens. Topical or systemic glucocorticoids

reduce the density of epidermal langerhans cells as doe's ultraviolet radiation.

Keratinization

All cells have an internal skeleton made up of micro filaments, microtubules, and intermediate filaments. Keratins are the main intermediate filaments in epithelial cells and are comparable to vimentin in mesenchymal cells, neurofilaments in neurons, and desmin in muscle cells. keratins are not just a biochemical curiosity, as mutations in their genes cause a number of skin diseases including simple epidermolysis bullosa and bullous ichthyosiform erythroderma.

The keratins are a family of more than 30 proteins, each produced by different genes. These separate into two gene families: one responsible for basic and the other for acidic keratins. The keratins polypeptide has a central helical portion with a non-helical N-terminal head and C-terminal tail. Individual keratins exist in pairs so that their double filament always consists of one acidic and one basic keratin polypeptide. The inter winding of adjacent filaments forms larger fibrils.

Different keratins are found at different levels of the epidermis depending on the stage of differentiation and disease; normal basal cells make keratins 5 and 14, but terminally differentiated suprabasal cells make keratins 1 and 10. Keratins 6 and 16 become prominent in hyperproliferative states such as psoriasis.

Types of immune reactions in the skin

An immune response is a reaction which occurs within an organism for the purpose of defending against foreign invaders.

Immune reactions are 1). Innate immune system 2). Adaptive immune system 3). Immediate hypersensitivity reactions 4). Allergic contact dermatitis.