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LACTOSKIN Capsules: Specially designed with essential natural Nutrients has an Antioxidant & detoxifying effect on skin to protect the skin from innumerable skin damages.

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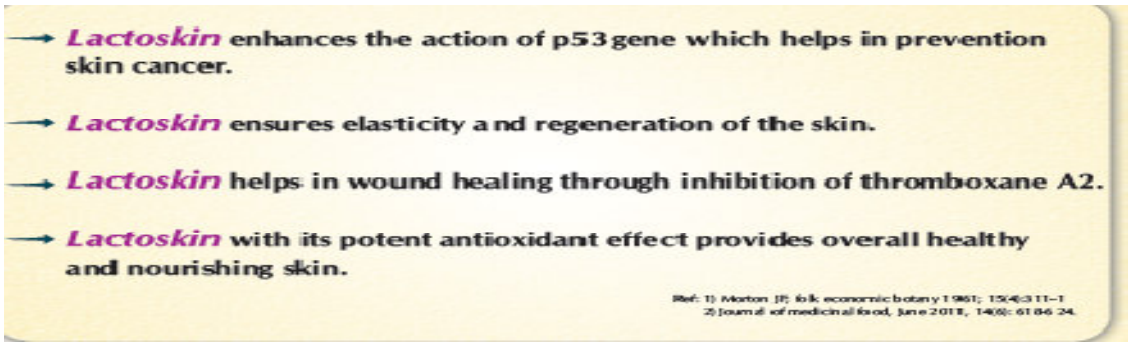
ABSTRACT

The skin supports its own ecosystems of microorganisms, including yeasts and bacteria, which cannot be removed by any amount of cleaning. Estimates place the number of individual bacteria on the surface of one square inch (6.5 square cm) of human skin at 50 million, though this figure varies greatly over the average 20 square feet (1.9 m^2) of human skin. Oily surfaces, such as the face, may contain over 500 million bacteria per square inch (6.5 cm^2). Despite these vast quantities, all of the bacteria found on the skin's surface would fit into a volume the size of a pea. In general, the microorganisms keep one another in check and are part of a healthy skin. When the balance is disturbed, there may be an overgrowth and infection, such as when antibiotics kill microbes, resulting in an overgrowth of yeast. The skin is continuous with the inner epithelial lining of the body at the orifices, each of which supports its own complement of microbes. Cosmetic products should be used carefully on the skin because these may cause allergic reactions. Sunlight, water and air play an important role in keeping the skin healthy.Lactoskin capsules are specially designed with essential natural Nutrients which has an Antioxidant & detoxifying effect on skin to protect the skin from innumerable skin damages. The present paper Reviews the Role of Lactoskin Capsules developed by R&D cell of Lactonova Nutripharm Pvt Ltd. Hyderabad to protect the skin from innumerable skin damages..

Keywords; Lactoskin capsules,Natural Nutrients ,Antioxidant,Detoxifying effect.

INTRODUCTION



The human skin is the outer covering of the body. In humans, it is the largest organ of the integumentary system. The skin has up to seven layers of ectodermal tissue and guards the underlying muscles, bones, ligaments and internal organs.[1]

Human skin is similar to most of the other mammals skin, and human skin is very similar to pig skin.[2][3] Though nearly all human skin is covered with hair follicles, it can appear hairless. There are two general types of skin, hairy and glabrous skin (hairless).[4]

Because it interfaces with the environment, skin plays an important immunity role in protecting the body against pathogens[5] and excessive water loss.[6]Its other functions are insulation, temperature regulation, sensation, synthesis of vitamin D, and the protection of vitamin B folates. Severely damaged skin will try to heal by forming scar tissue. This is often discolored and depigmented.
In humans, skin pigmentation varies among populations, and skin type can range from dry to oily. Such skin variety provides a rich and diverse habitat for bacteria that number roughly 1000 species from 19 phyla, present on the human skin.[7][8]

Structure of Human Skin

Skin has mesodermal cells, pigmentation, such as melanin provided by melanocytes, which absorb some of the potentially dangerous ultraviolet radiation(UV) in sunlight. It also contains DNA repair enzymes that help reverse UV damage, such that people lacking the genes for these enzymes suffer high rates of skin cancer. One form predominantly produced by UV light, malignant melanoma, is particularly invasive, causing it to spread quickly, and can often be deadly. Human skin pigmentation varies among populations in a striking manner. This has led to the classification of people(s) on the basis of skin color.[9]
In terms of surface area, the skin is the second largest organ in the human body (the inside of the small intestine is 15 to 20 times larger). For the average adult human, the skin has a surface area of between 1.5-2.0 square meters (16.1-21.5 sq ft.). The thickness of the skin varies considerably over all parts of the body, and between men and women and the young and the old. An example is the skin on the forearm which is on average 1.3 mm in the male and 1.26 mm in the female.[10] The average square inch (6.5 cm^2) of skin holds 650 sweat glands, 20 blood vessels, 60,000 melanocytes, and more than 1,000 nerve endings.[11] The average human skin cell is about 30 micrometers in diameter, but there are variants. A skin cell usually ranges from 25-40 micrometers (squared), depending on a variety of factors.
Skin is composed of three primary layers: the epidermis, the dermis and the hypodermis.[10]

Epidermis, is the outermost layer of the skin. It forms the waterproof, protective wrap over the body's surface which also serves as a barrier to infection and is made up of stratified squamous epithelium with an underlying basal lamina.
The epidermis contains no blood vessels, and cells in the deepest layers are nourished almost exclusively by diffused oxygen from the surrounding air[12]and to a far lesser degree by blood capillaries extending to the outer layers of the dermis. The main type of cells which make up the epidermis are Merkel cells, keratinocytes, with melanocytes and Langerhans cells also present. The epidermis can be further subdivided into the following *strata* the outermost layer: corneum, lucidum (only in palms of hands and bottoms of feet), granulosum, spinosum, basale. Cells are formed through mitosis at the basale layer. The daughter cells move up the strata changing shape and composition as they die due to isolation from their blood source. The cytoplasm is released and the protein keratin is inserted. They eventually reach the corneum and slough off (desquamation). This process is called "keratinization". This keratinized layer of skin is responsible for keeping water in the body and keeping other harmful chemicals and pathogens out, making skin a natural barrier to infection.

Components of skin

The epidermis contains no blood vessels, and is nourished by diffusion from the dermis. The main type of cells which make up the epidermis are keratinocytes, melanocytes, Langerhans cells and Merkel cells. The epidermis helps the skin to regulate body temperature.

Layers

Epidermis is divided into several layers where cells are formed through mitosis at the innermost layers. They move up the strata changing shape and composition as they differentiate and become filled with keratin. They eventually reach the top layer called *stratum corneum* and are sloughed off, or desquamated. This process is called *keratinization* and takes place within weeks. The outermost layer of the epidermis consists of 25 to 30 layers of dead cells.

Sublayers

Epidermis is divided into the following 5 sublayers or strata:

- Stratum corneum
- Stratum lucidum
- Stratum granulosum
- Stratum spinosum
- Stratum germinativum (also called "stratum basale").

Blood capillaries are found beneath the epidermis, and are linked to an arteriole and a venule. Arterial shunt vessels may bypass the network in ears, the nose and fingertips.

Genes and proteins expressed in the epidermis

About 70% of all human protein-coding genes are expressed in the skin.[13][14] Almost 500 genes have an elevated pattern of expression in the skin. There are less than 100 genes that are specific for the skin and these are expressed in the epidermis.[15] An analysis of the corresponding proteins show that these are mainly expressed in keratinocytes and have functions related to squamous differentiation and cornification.

Dermis

The dermis is the layer of skin beneath the epidermis that consists of connective tissue and cushions the body from stress and strain. The dermis is tightly connected to the epidermis by a basement membrane. It also harbors many nerve endings that provide the sense of touch and heat. It contains the hair follicles, sweat glands, sebaceous glands, apocrine glands, lymphatic vessels and blood vessels. The blood vessels in the dermis provide nourishment and waste removal from its own cells as well as from the Stratum basale of the epidermis.
The dermis is structurally divided into two areas: a superficial area adjacent to the epidermis, called

the *papillary region*, and a deep thicker area known as the *reticular region*.

Papillary region

The papillary region is composed of loose are olar connective tissue. It is named for its fingerlike projections called *papillae*, that extend toward the epidermis. The papillae provide the dermis with a "bumpy" surface that interdigitates with the epidermis, strengthening the connection between the two layers of skin.
In the palms, fingers, soles, and toes, the influence of the papillae projecting into the epidermis forms contours in the skin's surface. These epidermal ridges occur in patterns (*see:* fingerprint) that are genetically and epigenetically determined and are therefore unique to the individual, making it possible to use fingerprints or footprints as a means of identification.

Reticular region

The reticular region lies deep in the papillary region and is usually much thicker. It is composed of dense irregular connective tissue, and receives its name from the dense concentration of collagenous, elastic, and reticular fibers that weave throughout it. These protein fibers give the dermis its properties of strength, extensibility, and elasticity. Also located within the reticular region are the roots of the hairs, sebaceous glands, sweat glands, receptors, nails, and blood vessels.

Subcutaneous tissue

The subcutaneous tissue (also *hypodermis* and *subcutis*) is not part of the skin, and lies below the dermis of the cutis. Its purpose is to attach the skin to underlying bone and muscle as well as supplying it with blood vessels and nerves. It consists of loose connective tissue, adipose tissue and elastin. The main cell types are fibroblasts, macrophages and adipocytes (subcutaneous tissue contains 50% of body fat). Fat serves as padding and insulation for the body.

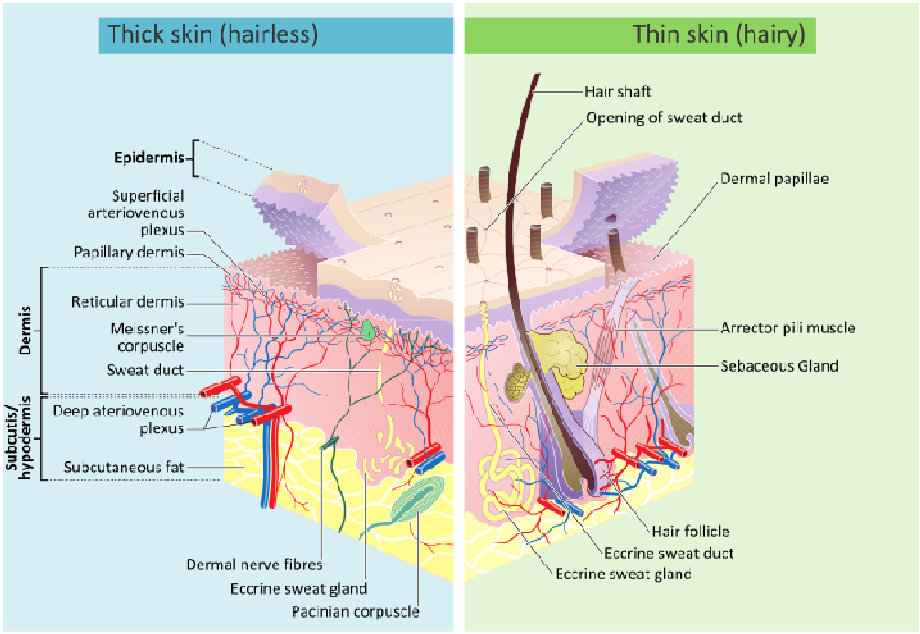


Fig.1 T.S of structure of skin

Functions

Skin performs the following functions

1. **Protection:** an anatomical barrier from pathogens and damage between the internal and external environment in bodily defense; Langerhans cells in the skin are part of the adaptive immune system.[5][6] Perspiration contains lysozyme that break the bonds within the cell walls of bacteria.[28]
2. **Sensation**: contains a variety of nerve endings that react to heat and cold, touch, pressure, vibration, and tissue injury.
3. **Heat regulation**: the skin contains a blood supply far greater than its requirements which allows precise control of energy loss by radiation, convection and conduction. Dilated blood vessels increase perfusion and heatloss, while constricted vessels greatly reduce cutaneous blood flow and conserve heat.
4. **Control of evaporation**: the skin provides a relatively dry and semi-impermeable barrier to fluid loss.[6] Loss of this function contributes to the massive fluid loss in burns.
5. **Aesthetics and communication**: others see our skin and can assess our mood, physical state and attractiveness.
6. **Storage and synthesis:** acts as a storage center for lipids and water, as well as a means of synthesis of vitamin D by action of UV on certain parts of the skin.
7. **Excretion:** sweat contains urea, however its concentration is 1/130th that of urine, hence excretion by sweating is at most a secondary function to temperature regulation.

8. **Absorption:** the cells comprising the outermost 0.25–0.40 mm of the skin are "almost exclusively supplied by external oxygen", although the "contribution to total respiration is negligible".[12] In addition, medicine can be administered through the skin, by ointments or by means of adhesive patch, such as the nicotine patch or iontophoresis. The skin is an important site of transport in many other organisms.
9. **Water resistance**: The skin acts as a water-resistant barrier so essential nutrients are not washed out of the body.

As skin ages& also due to several changes in environmental conditions such as pollution, UV radiations, it becomes thinner and more easily damaged. Intensifying this effect is the decreasing ability of skin to heal itself as a person ages. skin aging is noted by a decrease in volume and elasticity. There are many internal and external causes to skin aging. For example, aging skin receives less blood flow and lower glandular activity.

A validated comprehensive grading scale has categorized the clinical findings of skin aging as laxity (sagging), rhytids (wrinkles), and the various facets of photoaging, including erythema (redness), and telangiectasia, dyspigmentation (brown discoloration), solar elastosis (yellowing), keratoses (abnormal growths) and poor texture.[24] Cortisol causes degradation of collagen, accelerating skin aging.[25]

Lactoskin capsules are specially designed with essential natural Nutrients which has an Antioxidant & detoxifying effect on skin to protect the skin from innumerable skin damages.

Composition of lactoskin capsules

Lactoskin™

Nutritional support for healthy skin

Capsules

Nutritional Information (Approximate Values) Each capsule contains:	
Energy	1.971 Kcal
Fat	0.396 Kcal
Carbohydrate	0.681 Kcal
Cholesterol	0.000 Kcal
Resveratrol	5mg
Grape Seed Extract	50mg
Green Tea Extract	25mg
French Maritime Pine Bark Extract	20mg
D-Salina Extract (Contain Natural Mixed Carotenoids)	15mg
Aloe Vera Extract	10mg
Pomegranate Extract	10mg
Lycopene (10% disp)	5mg
Astaxanthin 5%	12mg
Vitamin C	15mg
Vitamin E	15 IU
Biotin	5mg
Vitamin B6	0.75mg
Zinc	7.5mg
L-Glutathione	5mg
Soy Flavonoids	20mg
Nicotinamide	5mg
Collagen Peptides (Type 1)	75mg
Konjac Powder	10mg
Leuocotomos Extract	25mg

Mechanism of Action of Lactoskin capsules.

Indications

Lactoskin capsules are specially designed with essential natural Nutrients which has an Antioxidant & detoxifying effect on skin to protect the skin from innumerable skin damages.

Contra-indications

Lactoskin capsules may interact with Antidiabetic & Anticoagulant drugs, Known contraindications to any ingredients of the supplement.

Dosage and directions for use

1-2 Capsules daily
It is taken preferably with meals or as directed by a physician, licensed nutritionist.

Safety

Lacto skin capsules has an excellent safety record in both animal & human investigations, should be considered as a supplement of choice for healthy skin
Lacto skin capsules is generally regarded as safe when taken in the recommended doses, however, mild reactions can include gastrointestinal problems, such as nausea.
Lacto skin capsules is generally well tolerated. Because of lack of long-term safety data, Lacto skin capsules should be avoided by pregnant women and nursing mothers.
Lactoskin capsules may interact with Antidiabetic & Anticoagulant drugs,

Side-effects

Very Mild Epigastric pain/tenderness, heartburn, diarrhea and nausea.

Special precautions

Lacto skin capsules with or directly after meals to lessen the possibility of gastrointestinal upset.
It should be avoided by pregnant women and nursing mothers.

Storage conditions

Store in a cool & dry place, protected from light.
Keep out of reach of children.

Storage life is 2 years.

The preparation should not be used after the expiry date.

CONCLUSION

The human skin is a rich environment for microbes. Around 1000 species of bacteria from 19 bacterial phyla have been found. Most come from only four phyla: actinobacteria (51.8%), firmicutes (24.4%), proteobacteria (16.5%), and bacteroidetes (6.3%). Skin has mesodermal cells, pigmentation, such as melanin provided by melanocytes, which absorb some of the potentially dangerous ultraviolet radiation (uv) in sunlight. It also contains dna repair enzymes that help reverse uv damage. skin performs the function of protection by forming an anatomical barrier from pathogens and damage between the internal and external environment in bodily defense, langerhans cells in the skin are part of the adaptive immune system. Perspiration contains lysozyme that break the bonds within the cell walls of bacteria. Cosmetic products should be used carefully on the skin because these may cause damage to skin &allergic reactions as well . Sunlight, water and air play an important role in keeping the skin healthy. lactoskin capsules are specially designed with essential natural nutrients which has an antioxidant & detoxifying effect on skin to protect the skin from innumerable skin damages.

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