

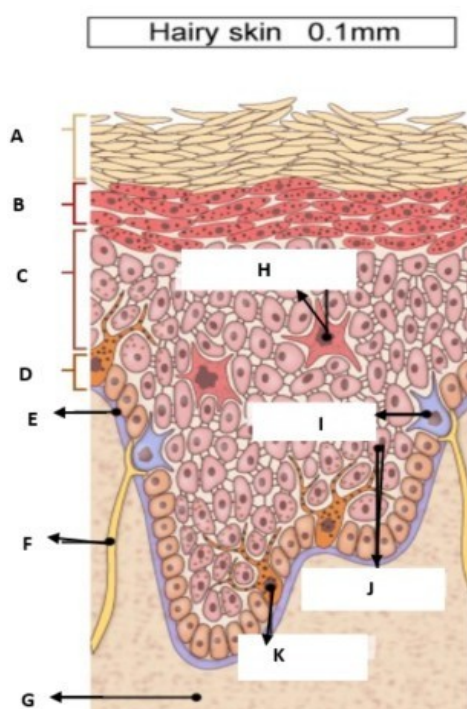
OL Lab 5: Integumentary system

Learning Objectives:

- Identify the tissue and cellular features of the skin.
- Identify the structures associated with the skin.
- Correlate the anatomical features to its functions.
- Identify the role of the skin in thermoregulation and wound healing.

Part A: Anatomy of the skin

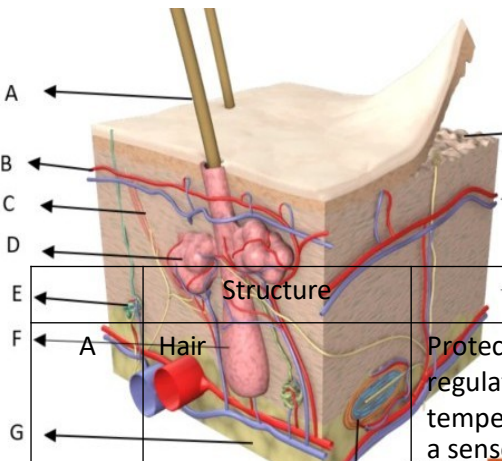
I. Microscopic anatomy of the skin. Complete the table using the image provided:



	Structure	Function
A	Epidermis; stratum corneum	Protects deeper layers from injury and microbial invasion.
B	Stratum Granulosum	Prevents fluid loss.
C	Stratum Spinosum	Strength and flexibility of the skin
D	Stratum Basale	Generation of cells on the epidermis.
E	Basement Membrane	Supports structure, separates tissues, and protect them.
F	Sensory Nerve	Detect and transmit information to the Central Nervous System (CNS).
G	Dermis	Support and protect the skin and the deeper layers. Aide in sensation and thermoregulation.
H	Langerhans Cell	Fighting skin infections by taking up and processing microbial antigens.
I	Merkel Cell	Touch receptors of the skin.
J	Keratinocyte	Protects the body from injury, infection, and any other harmful factors.
K	Melanocyte	Produces melanin and it's a pigment that gives hair and skin their color. Protects skin from damage caused by UV radiation.

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II. Gross anatomy of the skin. Complete the table using the image provided.



	Structure	Function
A	Epidermis	Protective barrier, help regulate body temperature, and acting as a sensory antenna.
B	Cutaneous Blood Vessels	Help regulates body temperature and provide nutrients to the skin.
C	Arrector Pili Muscle	Creates goosebumps and helps in thermoregulation.
D	Sebaceous Gland	Protects the skin from drying out by producing sebum.
E	Merocrine/Eccrine Sweat Gland	Regulates body temperature.
F	Hair Follicle	Produce and sustain hair growth.
G	Hypodermis	Fat storage. Provides insulation to regulate body temperature, cushioning from impact and anchor the skin to muscle and bones. Acts as a protective layer and energy reserve.
H	Pacinian Corpuscle	Sensory receptor detecting deep pressure and high frequency vibrations within the skin.
I	Epidermal Ridges	Fingerprints, enhancing grip or sense of touch when touching objects.
J	Papillary Region	Helps regulate temperature, supply nutrients, and waste removal or remove cellular waste from the skin.
K	Reticular Region	Provides strength, elasticity, and support.
L	Dermis	Support and protect the skin and deeper layers. Helps in thermoregulation and in sensation.