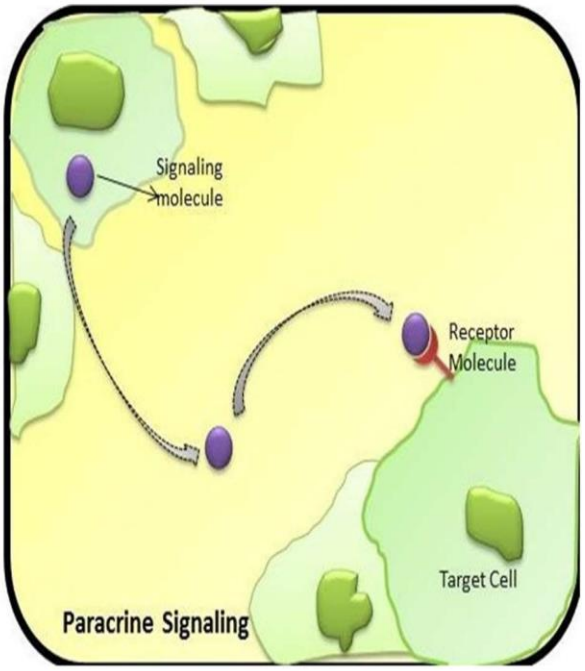
HUMAN ANATOMY AND PHYSIOLOGY-I, BP-101(T)

UNIT-I (Introduction to human body)

CLASS:6

TOPIC – Forms of intracellular signaling: a) Contact-dependent b) Paracrine c) Synaptic d) Endocrine

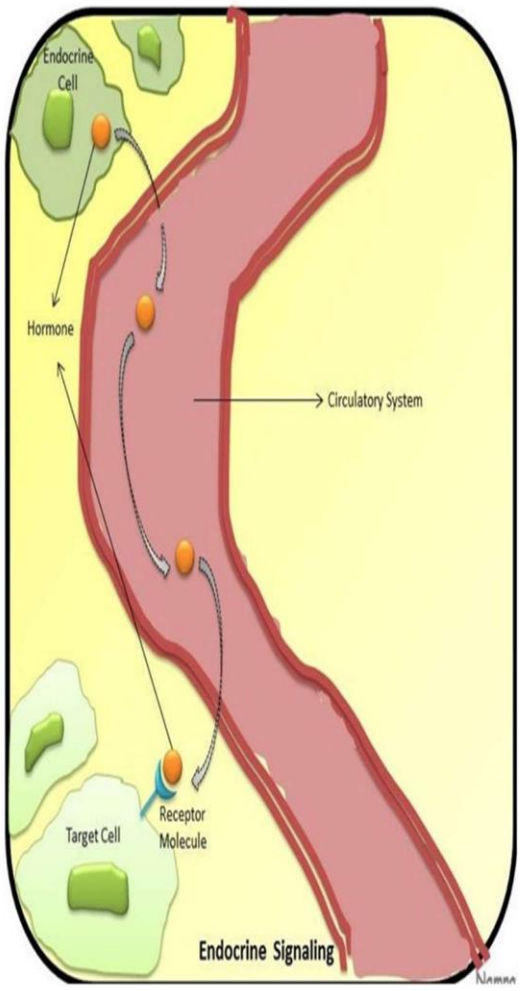
Paracrine Signaling



'*Para*' means 'nearby' and '*crine*' means ' to secrete'. Thus, 'paracrine' word means 'secretion nearby'. Thus, in this type of signaling, the molecules (signaling molecule) released by one cell acts on or bind to the receptor on the nearby neighbouring cell. A very common example of paracrine signaling is the neurotrasmitters. These are present at the synapse or junction of neuron cells and help in transmitting the signals. So, neurotransmitters are released by one neuron cell and they act on nearby neuron cell to transmit the signal.

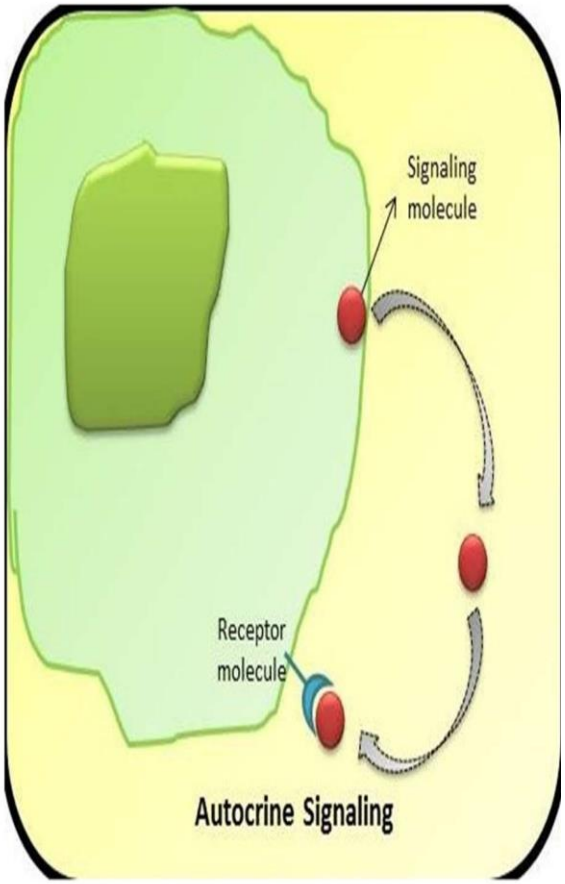
Endocrine Signaling

The word “endocrine” originates from two words, *'endo'* and *'crine'*. The former word means 'within' and the suffix *'crine'* means 'to secrete' or 'separate' Thus, the word endocrine means ‘secrete from within’. In this type of signaling, the signaling molecules are secreted from within the endocrine glands; they travel through the circulation system and act on/ bind to receptor molecules on the target cell (as can be seen in the above figure). The signaling molecules in this type of signaling are ‘hormones'. An example of endocrine signaling: The hormone, insulin, is secreted by pancreas which then travel through the circulatory system which has an effect of stimulating muscle cell or adipose cells.



Autocrine Signaling

'*Auto*' means 'self' and '*crine*' means 'to secrete'. Thus, 'autocrine' means 'secrete to itself' Thus, in this type of signaling, the molecules (receptor molecules) are secreted from the cell and act on the same cell. In other words, some cells respond to signaling molecules that they themselves produce.



For example, the cytokine, Interleukin-1 (IL-1) in monocytes. The interelukin is produced in monocytes response to some external stimuli and it binds to receptor present on the surface of its own cell.

IMPORTANT QUESTIONS:

2M QUESTIONS:

1. Define Anatomy and Physiology along with its scope.
2. Define Homeostasis.
3. What is feedback system.
4. Define cell. Write the functions of mitochondria.
5. Differentiate mitosis and meiosis.
6. Differentiate Phagocytosis and Pinocytosis.
7. Define: 1. Facilitated transport 2. Osmosis transport.
8. Differentiate exocrine and endocrine signaling.
9. Define Autocrine and Juxtacrine signaling.
10. Define tissue and its types with examples.

5M QUESTIONS:

1) Draw a labelled diagram cell showing its cell organelles and their function.
2) Define tissue and its types in detail.
3) What is cell cycle and explain in detail.
4) What is cell division and explain its types.
5) What are different cell junctions.
6) Explain cell signaling and cell communication.
7) What is homeostasis and explain its feedback mechanism

10M QUESTIONS:

1. Define tissue and its types in detail.
2. What are different cell junctions.
3. Explain cell signaling and cell communication.