

PLANT AND ANIMAL HORMONES AND THEIR DIFFERENCES.

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ANNOTATION

One of the common features of living organisms is their ability to adapt. The essence of adaptation is to preserve and protect itself in the changing external environment, that is, to ensure the stability of the internal environment.

Keywords: *hormone, regulator, auxin, ethylene, gibberelin, endocrine system.*

The vital activity of higher organisms is systematized as a result of the interaction of a number of regulatory systems. The function of these multicellular organisms requires effective communication between cells, tissues, organs, and so on. In these organisms, almost all processes depend on chemical signals that pass from one part of the organism to another. The function of this chemical is performed by hormones of biologically active organic compounds. Hormones are produced in the body and are taken up by the cells of the tissue that are targeted for that hormone and exert their effects on them. In the membrane of cells prone to the action of hormones, there are receptors that recognize each hormone individually and interact with it in a specific way.

Scientific studies have shown that plants also produce signal molecules called hormones. Throughout the life of a plant, all the processes from the development of the fertilized egg cell to the aging of the organism take place in the presence of phytohormones. They can alter or control certain physiological processes within a plant. If they are produced in a plant, they are called hormones. Plant hormones are a group of naturally occurring organic substances that affect physiological processes at low concentrations. The effects of plant hormones are often localized to target tissues. When a hormone binds to a specific receptor, it stimulates the activation of chemical and transport phases. Auxins are a group of chemicals, mainly indole, that are formed in the growing third of the stem and root of plants and activate the growth of the plant. It has been found that if the third part of the growing stem is cut off, its growth will suddenly decrease, and if this cut part is put back in its place, its growth will be restored. In these experiments, it was concluded that in the growing third of the plant, certain substances are formed that affect the growth of cells. These substances were later called auxin.

Gibberellins affect different aspects of growth and development. They play an important role in the growth of plant stems. This feature is especially noticeable in the family of monocotyledons, which belong to the monocotyledonous plants. Gibberell also grows low-growing (dwarf) forms of the plant. At the same time they are actively involved in the management of flowering and fruiting processes of the plant. The effect of gibberellin on the growth and development of plants is inextricably linked to their effect on the metabolic processes that take place in the plant organism. Gibberellins primarily alter the biochemical processes that take place in plants. Under their influence, the process of photosynthesis accelerates and the intensity of respiration increases. However, the activity of most hydrolytic enzymes, especially the enzyme amylase, is somewhat enhanced. Under the influence of gibberellin, protein and carbohydrate metabolism also changes. A number of organic compounds that accelerate plant cell division, affect aging and seed dormancy, and are involved in the regulation of other aspects of growth are called cytokines. Ethylene affects all vegetative parts of the plant. It accelerates the ripening of fruits and affects the shedding of fruits and leaves. At the same time, ethylene stops the growth of stems and roots. It accelerates the flowering of some plants, such as pineapple.

In animals, as well as in humans, hormones are produced in the endocrine glands or endocrine glands. The endocrine glands secrete certain chemicals called hormones, which are transmitted through the bloodstream and pass into the tissue, where they perform a specific physiological function in the body. They are produced in small quantities. The hormone is therefore a biologically active organic substance that is formed in small amounts in one part of the body to another and is important for physiological changes.

The differences between plant hormones and animal hormones are as follows:

- a) Plant hormones are simple organic substances, while animal hormones are complex organic substances.
- b) Plant hormones are transported by xylem, phloem, or diffusion, while animal hormones are carried in the blood.
- c) There are no specific organs involved in the synthesis of plant hormones, animal hormones are constantly synthesized in the endocrine glands.

In conclusion, hormones are of great biological importance in plants and animals. Although the amount of hormones is a small percentage of the total volume of the organism, their physiological and biological role is very large. They spread throughout the body and control the activity of various organs and tissues. Some affect specific organs. This means that hormones are produced in certain amounts to support the body's metabolism and other functions.

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