15.2D: Transport of Hormones

Hormones synthesized by the endocrine glands are transported throughout the body by the bloodstream.

Learning Objectives

• Describe the way in which hormones are transported in the endocrine system

Key Points

• Hormones are typically secreted into systemic circulation. However, some are secreted into portal systems that allow for direct hormone targeting.

• Hormones can exist freely in systemic circulation, but the majority are bound with transport proteins.

• Transport proteins hold hormones inactive in systemic circulation and create a reservoir within the circulation that facilitates an even distribution of hormones throughout the tissue or organ.

Key Terms

• transport protein: A protein that binds with a hormone in systemic circulation that facilitates its efficient transport.

The endocrine system is a system of ductless glands that secrete hormones directly into the circulatory system to be carried long distances to other target organs that regulate key body and organ functions.

Some endocrine glands secrete into a portal system rather than the systemic circulation that allows for the direct targeting of hormones. For example, hormones secreted by the pancreas pass into the hepatic portal vein that
transports them directly to the liver.

Once within the circulatory system a small proportion of hormones circulate freely, however the majority are bound with a transport protein. Mainly produced in the liver, these transport proteins are hormone specific, such as the sex hormone binding globulin that binds with the sex hormones.

When bound with a transport protein hormones are typically inactive, and their release is often triggered in regions of low hormone concentration or can be controlled by other factors. Therefore, transport proteins can act as a reservoir within the circulatory system and help insure an even distribution of hormones within an organ or tissue.


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