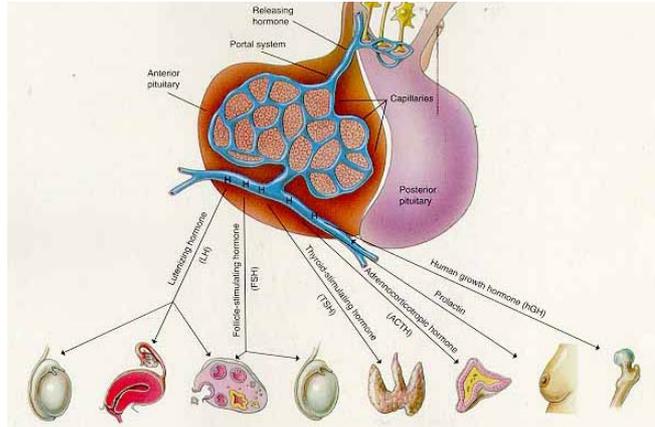


Hormones

A hormone is a chemical messenger from one cell (or group of cells) to another. All multicellular organisms (including plants) produce hormones. The best known hormones are those produced by endocrine glands of vertebrate animals, but hormones are produced by nearly every organ system and tissue type in a human or animal body. Hormone molecules are secreted (released) directly into the bloodstream, other body fluids, or into adjacent tissues.

Hormone actions vary widely, but can include stimulation or inhibition of growth, induction or suppression of apoptosis (programmed cell death), activation or inhibition of the immune system, regulating metabolism and preparation for a new activity (e.g. fighting, fleeing, mating) or phase of life (e.g. puberty, caring for offspring, menopause). In many cases, one hormone may regulate the production and release of other hormones. Many of the responses to hormone signals can be described as serving to regulate metabolic activity of an organ or tissue. Hormones also control the reproductive cycle of virtually all multicellular organisms.



Every cell is capable of producing a vast number of regulatory molecules. The classical endocrine glands and their hormone products are specialized to serve regulation on the overall organism level, but can in many instances be used in other ways or only on the tissue level.

The rate of production of a given hormone is most commonly regulated by a homeostatic control system, generally by negative feedback. Homeostatic regulation of hormones depends, apart from production, on the metabolism and excretion of hormones.

Hormone secretion can be stimulated and inhibited by:

Other hormones (stimulating or releasing-hormones)

Plasma concentrations of ions or nutrients, as well as binding globulins

Neurons and mental activity

Environmental changes, e.g. of light or temperature

One special group of hormones are trophic hormones that act as stimulants of hormone production of other endocrine glands. For example: thyroid-stimulating hormone (TSH) causes growth and increased activity of another endocrine gland - the thyroid - hence increasing output of thyroid hormones.

The [enzyme-linked immunosorbent assay \(ELISA\)](#) and the [radio-immunoassay \(RIA\)](#) are the most commonly used [serologic tests](#) for detecting hormones.

Ideal instruments for ELISA formats are the BERTHOLD TECHNOLOGIES absorbance readers Apollo-1 (1 channel) and Apollo-8 (8 channel) or the multimode reader Mithras LB 940.

For Radio-Immunoassays BERTHOLD offers the Multi-Crystal Gamma Counter LB 2111.

By exchanging colorimetric substrates of horseradish peroxidase or phosphatases with luminescent ones a 100-fold increase in sensitivity may be achieved.

Especially for [luminescence immunoassays \(LIA\)](#) BERTHOLD designed the CentroLIA LB 961, the stand alone microplate luminometer with integrated software. The use of softkeys with an interactive text display of their associated function makes the CentroLIA an extremely user-friendly, easy-to-use, instrument. Additionally BERTHOLD offers a variety of luminometers in different probe formats and according to your throughput demands: Centro LB 960 microplate luminometer and Mithras LB 940 multimode reader with MikroWin software and curve fitting option. The tube

luminometers Lumat LB 9507 single tube luminometer, Junior LB 9509 portable tube luminometers, AutoLumat LB 953 and Flash n'Glow automated tube luminometers are/can be equipped with sophisticated and easy-to-use immunoassay software.

Selection of hormone detection kits:

Luminescence technology (microplate):

Kits:

- 17beta-Estradiol LIA (Assay Designs)
- Cortisol LIA (IBL Hamburg)
- FSH CIA (Monobind; Diagnostics Automation; Chemclin Biotech)
- LH CIA (Monobind; Diagnostics Automation; Chemclin Biotech)
- Testosterone LIA (DBC; IBL Hamburg)
- T4 LIA (DBC; Diagnostic Automation; Monobind; Chemclin Biotech)
- T3 LIA (DBC; Diagnostic Automation; Monobind; Chemclin Biotech)

Luminescence technology (tube):

- ACTH LIA (Brahms)
- Triiodothyronine (T3) LIA (Brahms)
- TSH LIA (Brahms)
- Thyroxine (T4) LIA (Brahms)

Absorbance technology:

Kits:

- FSH EIA (Monobind; Omega Diagnostics)
- LH EIA (Monobind; Omega Diagnostics)
- Testosterone EIA (Assay Designs)
- T3 EIA (Monobind; Omega Diagnostics)
- T4 EIA (Monobind; Omega Diagnostics)

Radioactive technology:

Kits:

- Free T4 RIA (Brahms)
- Free T3 RIA (Brahms)
- ACTH RIA (Alpco)
- Estriol RIA (Alpco)
- Vasopressin RIA (Alpco)

BERTHOLD instruments:

CentroLIA Microplate Luminometer LB 961
Centro Microplate Luminometer LB 960
Mithras Multimode Reader LB 940



BERTHOLD instruments:

Lumat Single Tube Luminometer LB 9507
Automated Tube Luminometers LB 955/LB953



BERTHOLD instruments:

Apollo Absorbance Readers LB 911/LB 912
Mithras Multimode Reader LB 940



BERTHOLD instruments:

Multi-Chrystal Gamma Counter LB 2111



With this abstract BERTHOLD TECHNOLOGIES likes to give a short introduction and some information about available kits. BERTHOLD TECHNOLOGIES will not be in no way responsible for the validity of information given on these pages.