

What is a hormone? How is it defined?

Subsequent questions asked about chemical types of hormones, hormones secreted by the anterior pituitary, the principal biological role of the thyroid hormones, production of thyroid hormones, advantages of thyroxine for thyroid replacement in comparison to triiodothyronine, and mechanism of action of propylthiouracil.

“What is a hormone”

a hormone is a chemical substance produced by an organ or gland that regulates the action of other cells or organs

“How is it defined?”

- there are three chemical classes of hormones
 - amines (synthesised from tyrosine)
 - steroids (synthesised from cholesterol)
 - peptides/proteins (from transcription via the rough endoplasmic reticulum)

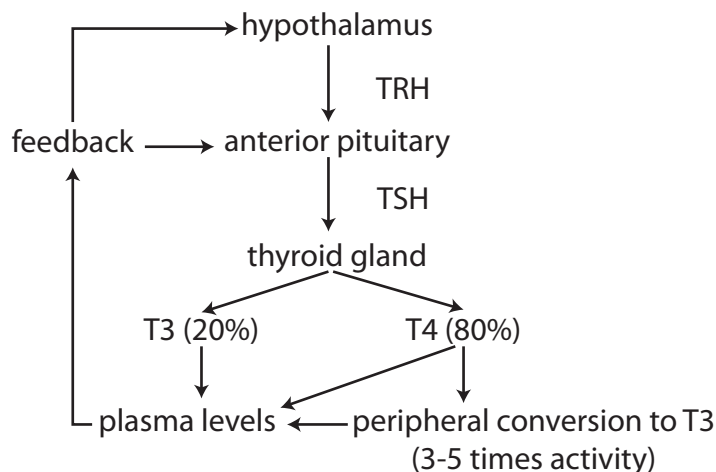
“Can you describe hormone signalling?”

- there are four types of hormone signalling
 - endocrine - into the plasma and then to another cell/organ
 - neurocrine - from a neuron into the plasma and then to another cell/organ
 - paracrine - into the ECF and to another cell/organ
 - autocrine - into the ECF and back to the same cell/organ

“Can you name the hormones released from the anterior pituitary?”

LH, FSH, Prolactin, GH, ACTH, TSH

“Can you demonstrate the physiological regulation of thyroid hormone?”



“What is the mechanism of action of propylthiouracil?”

Inhibits the synthesis of thyroid hormones by blocking the oxidation of iodine in the thyroid gland; blocks synthesis of thyroxine and triiodothyronine