



Physical Activity and Health Promotion

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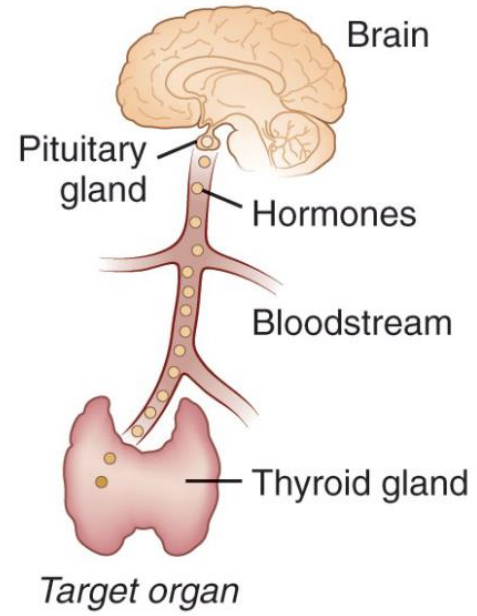
St John Calibita Hospital Tiber Island Rome

Section of Reproductive Endocrinology

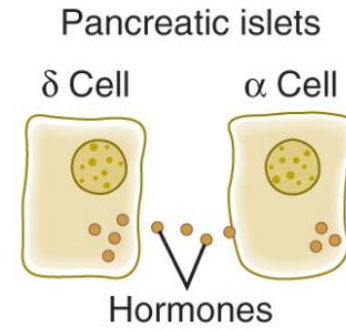
Lesson 1

Basic

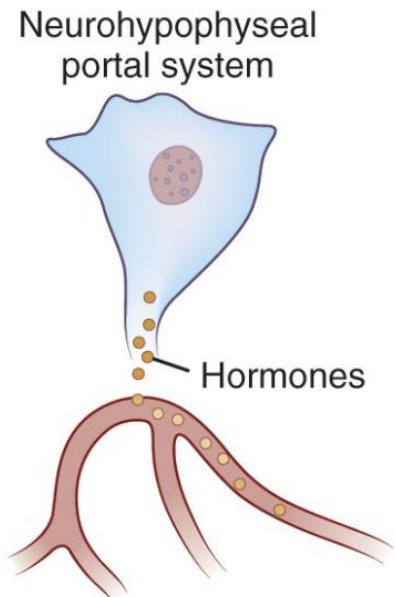
Endocrine



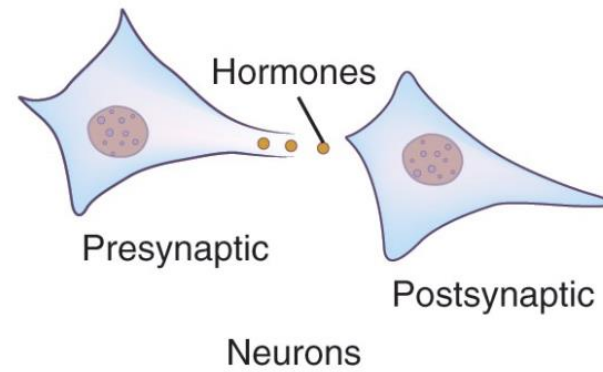
Paracrine



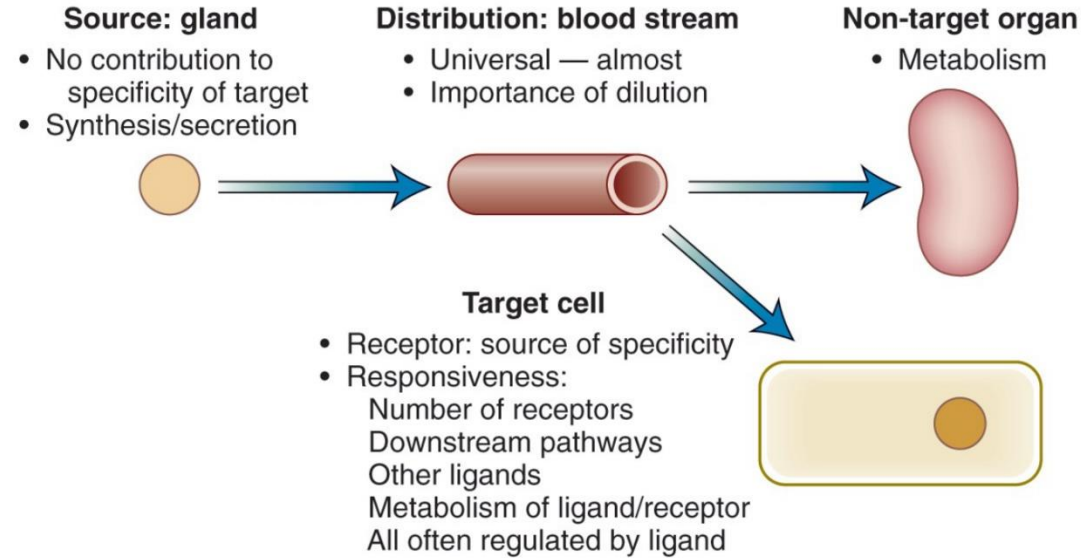
Neuroendocrine



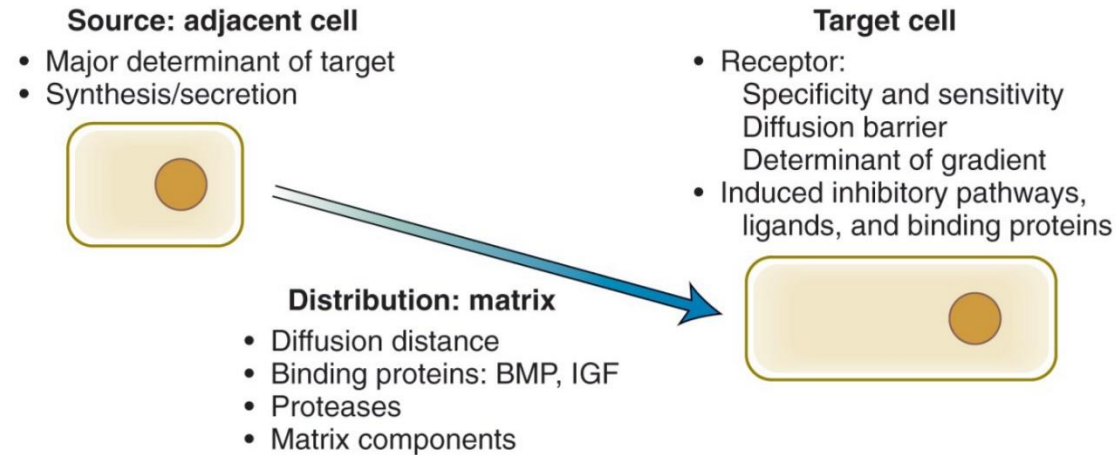
Neurotransmitter

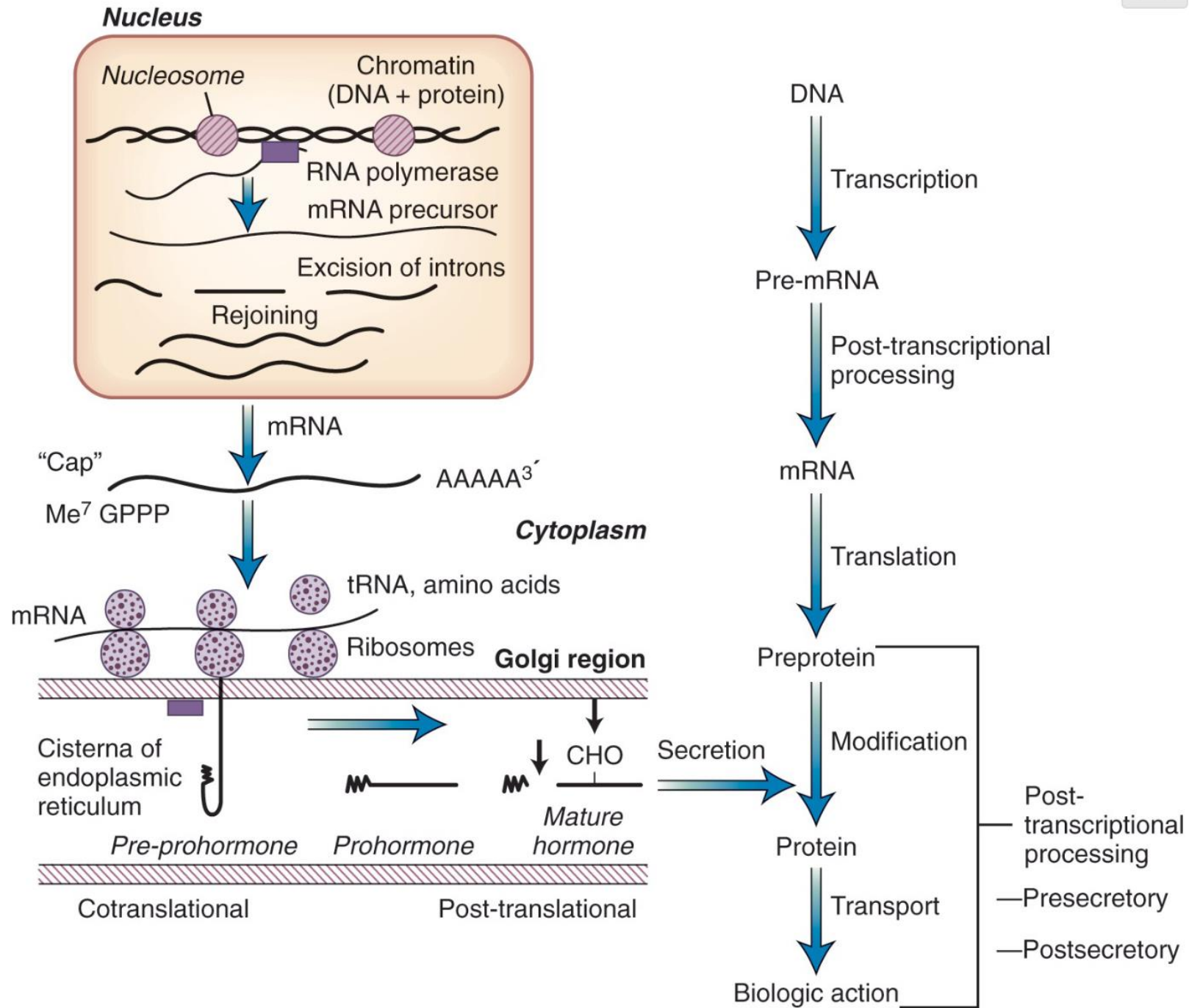


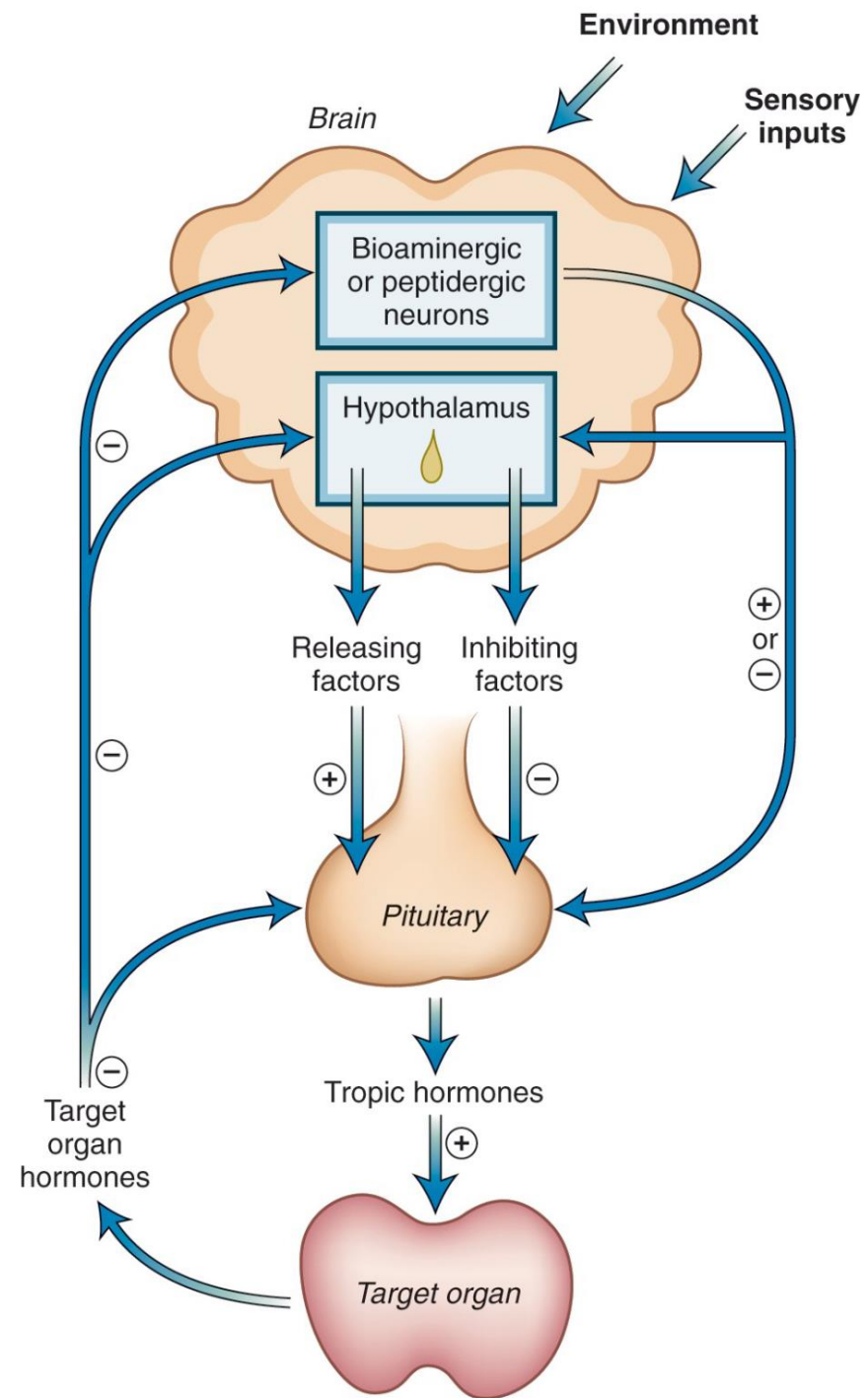
Regulation of signaling: endocrine

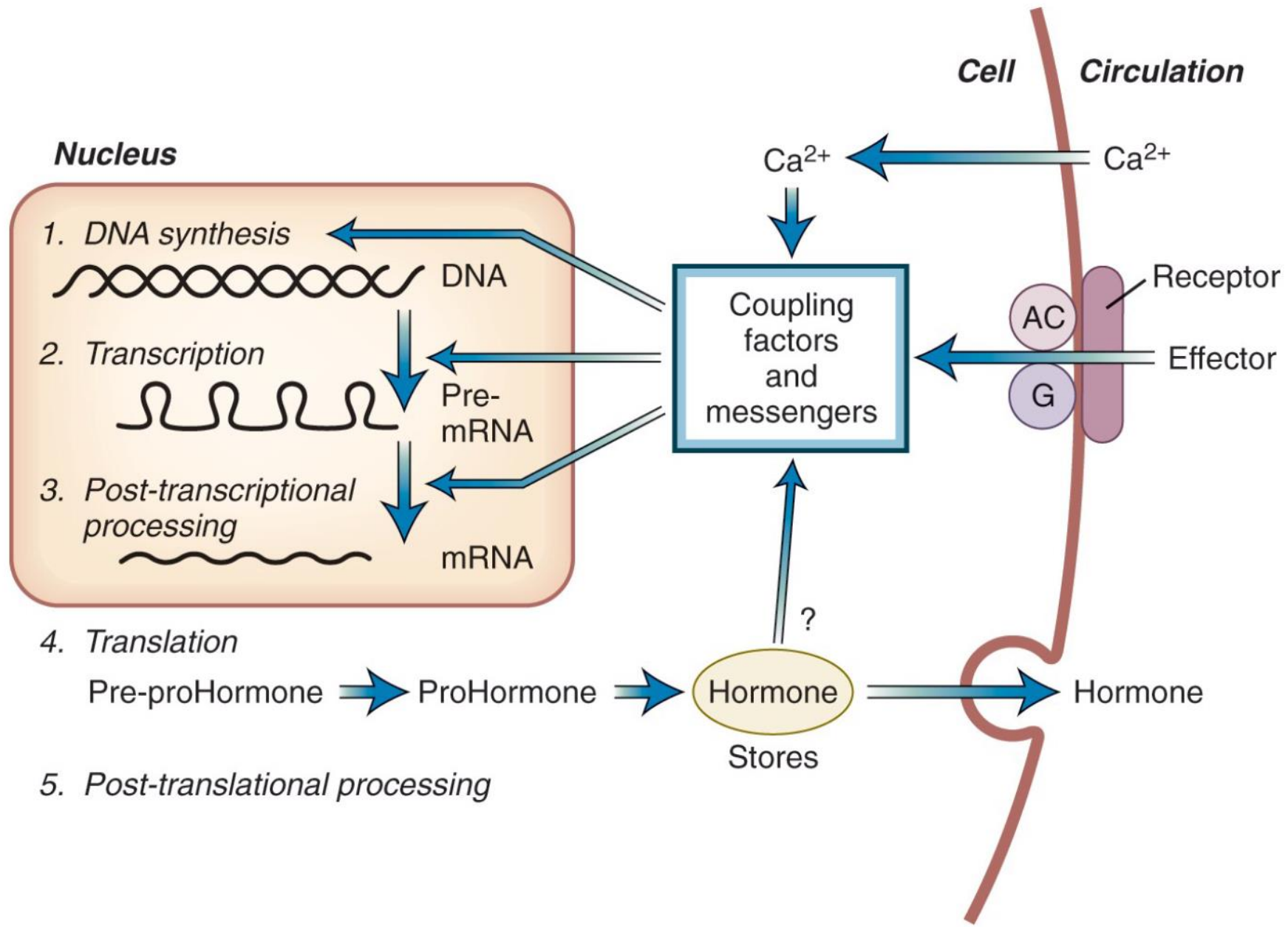


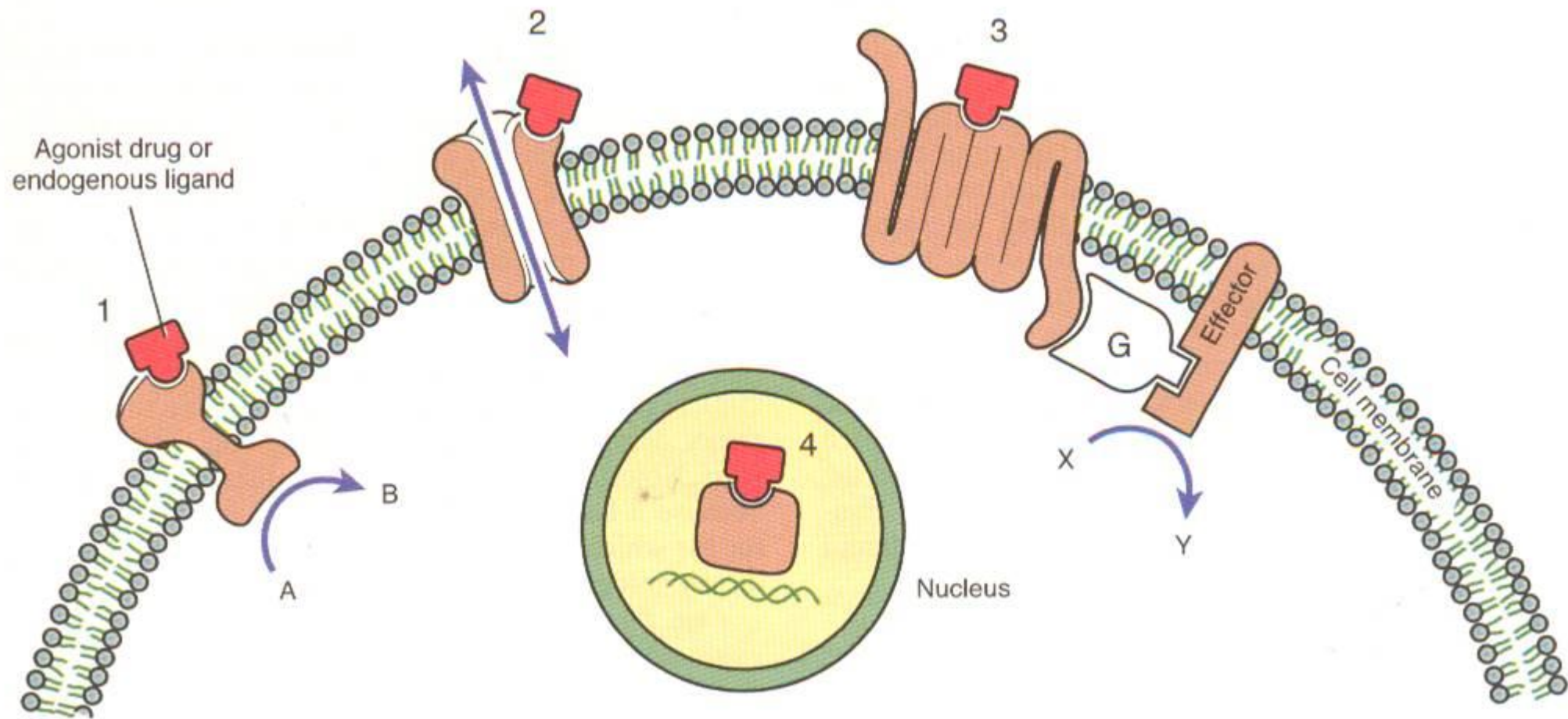
Regulation of signaling: paracrine

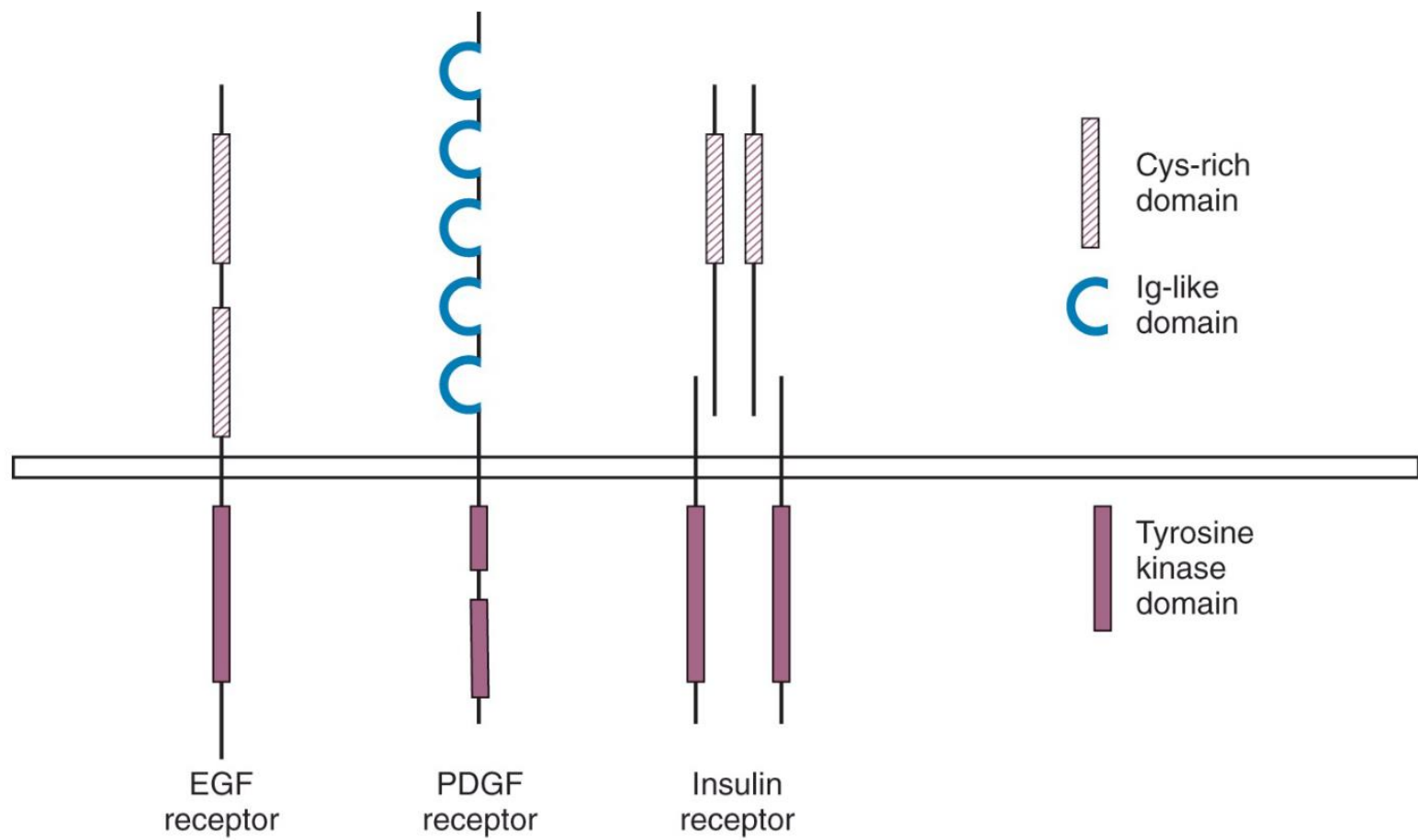


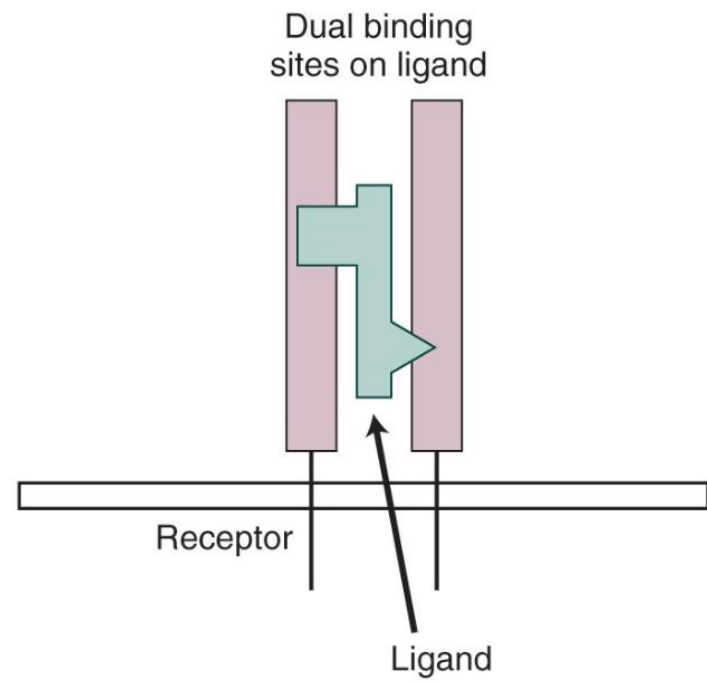
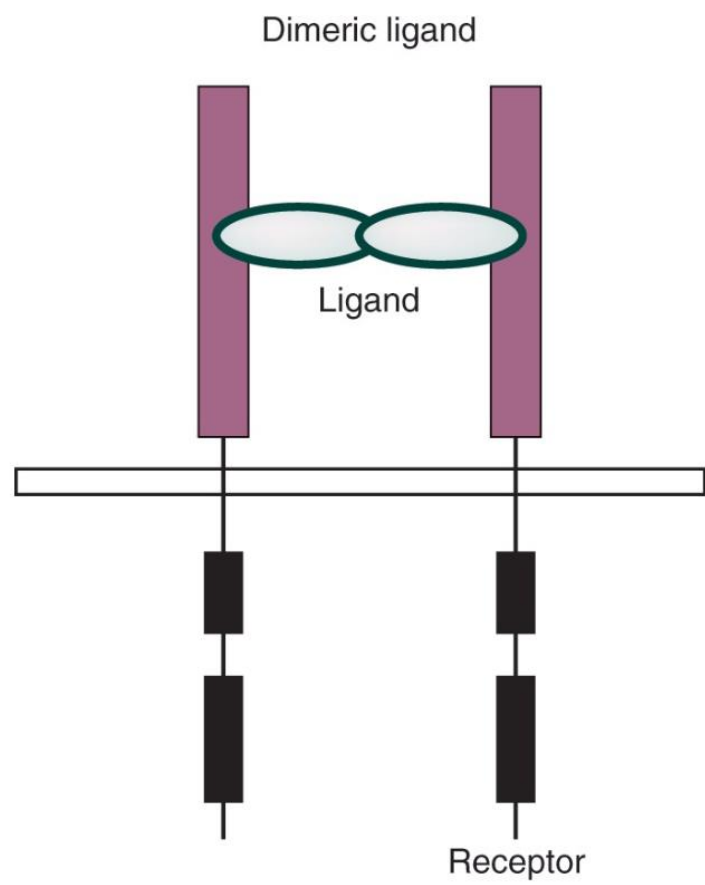


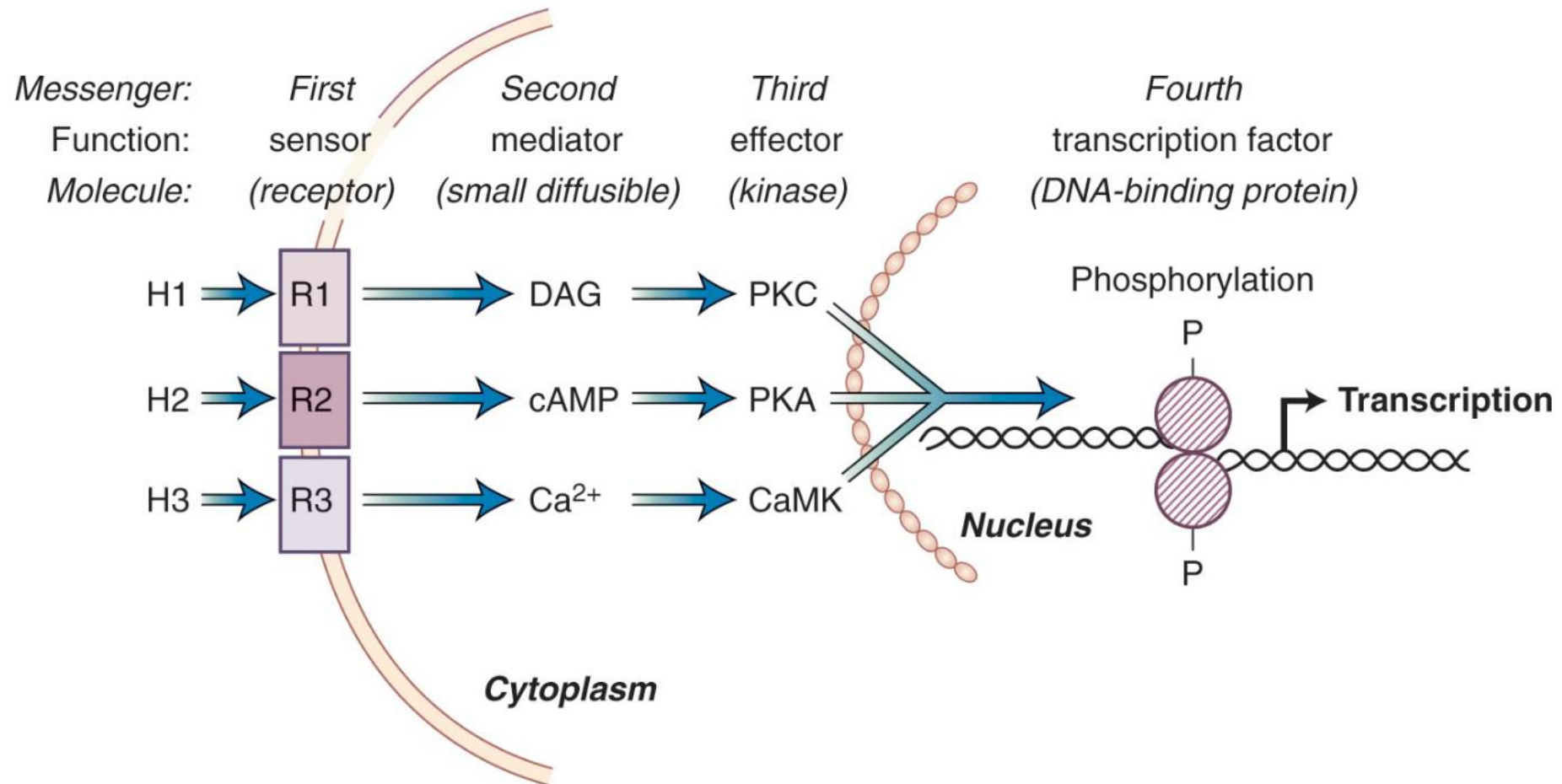


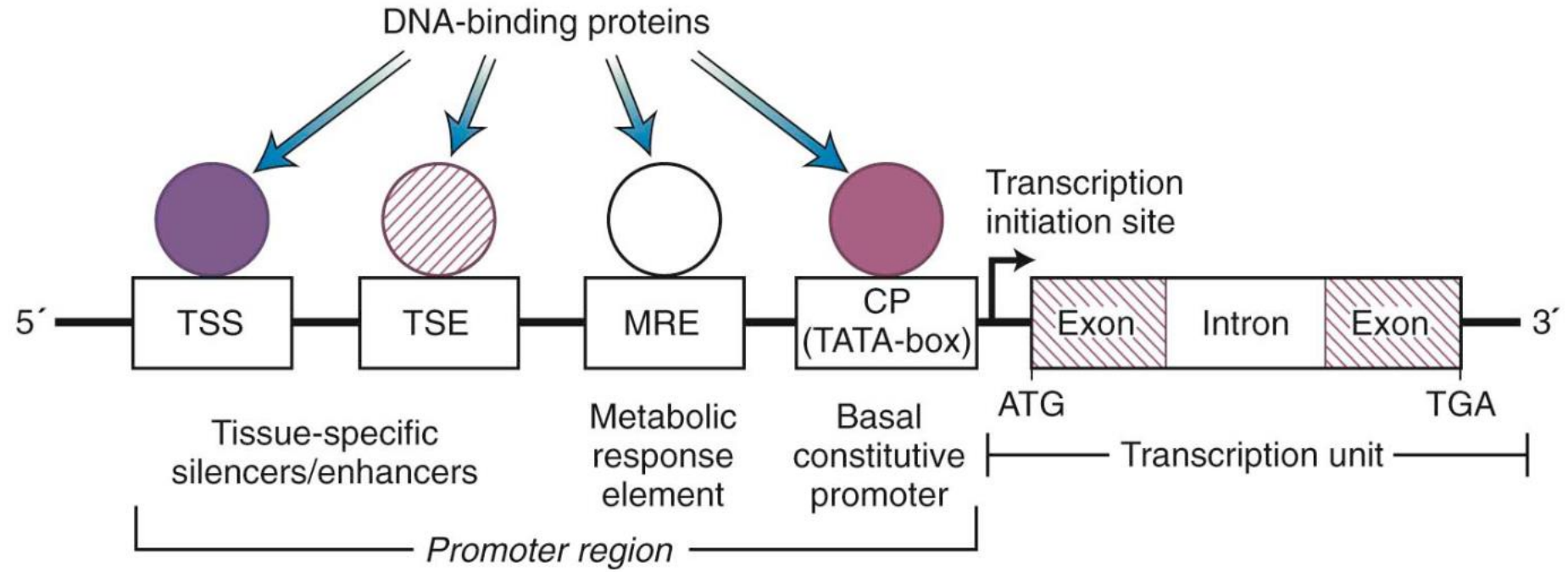








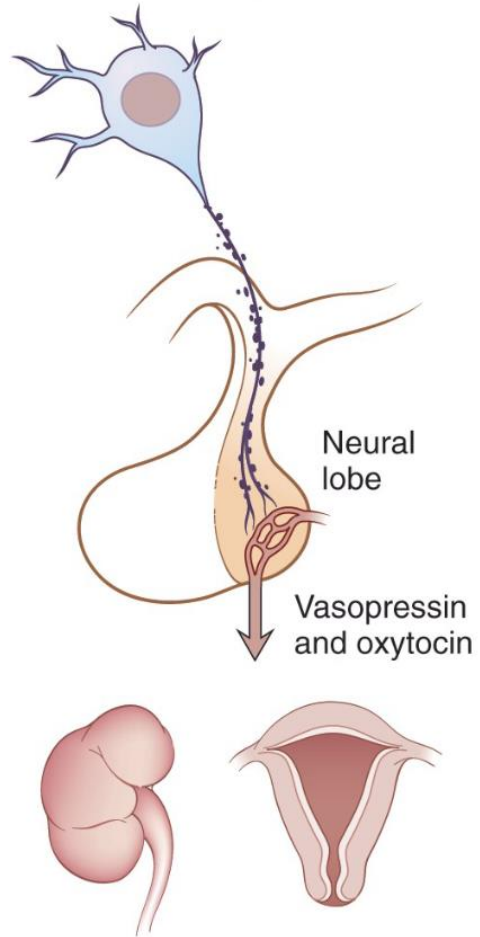






Magnicellular Neuron

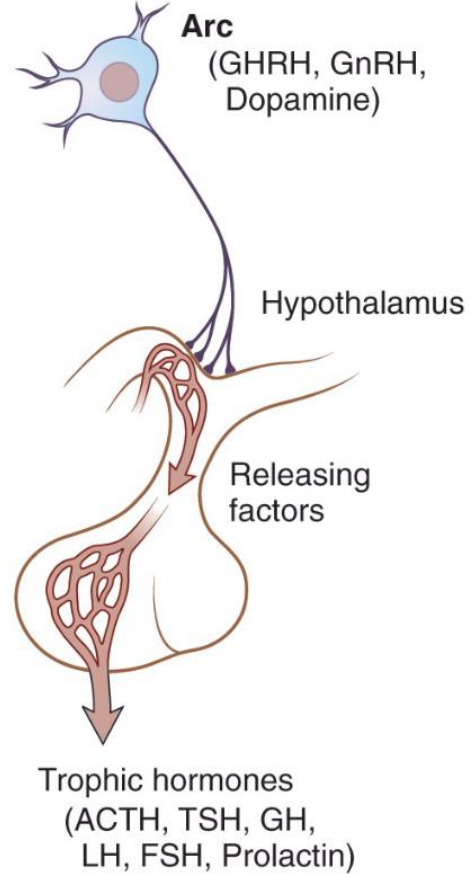
Location: **SON, PVH**
(AVP, OXY)



Kidney, Uterus,
Mammary Gland

Parvicellular Hypophyseotropic Neuron

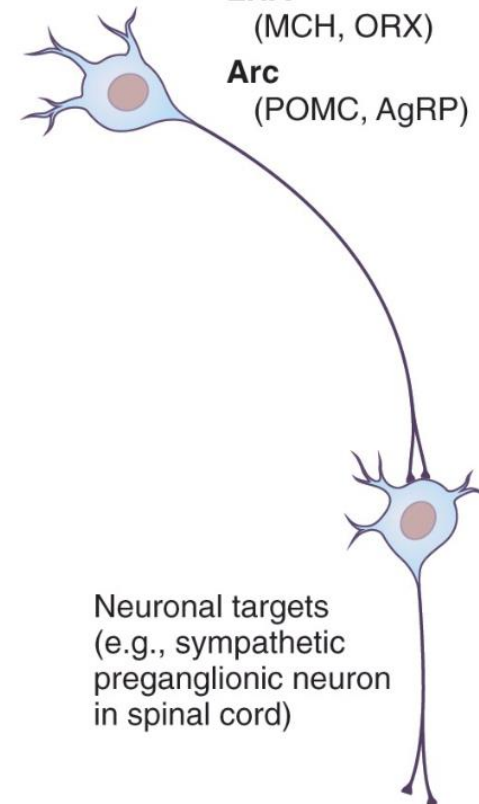
Location: **PeVH, PVH**
(TRH, CRH, Somatostatin)



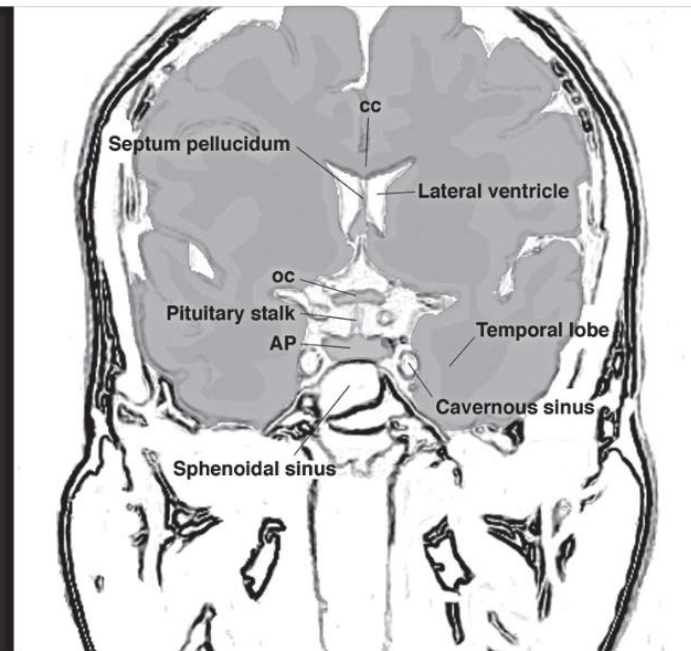
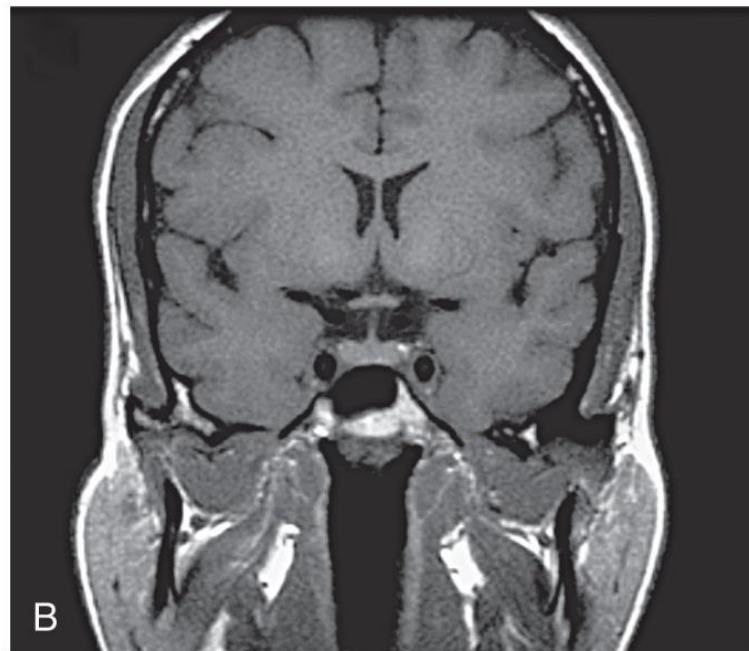
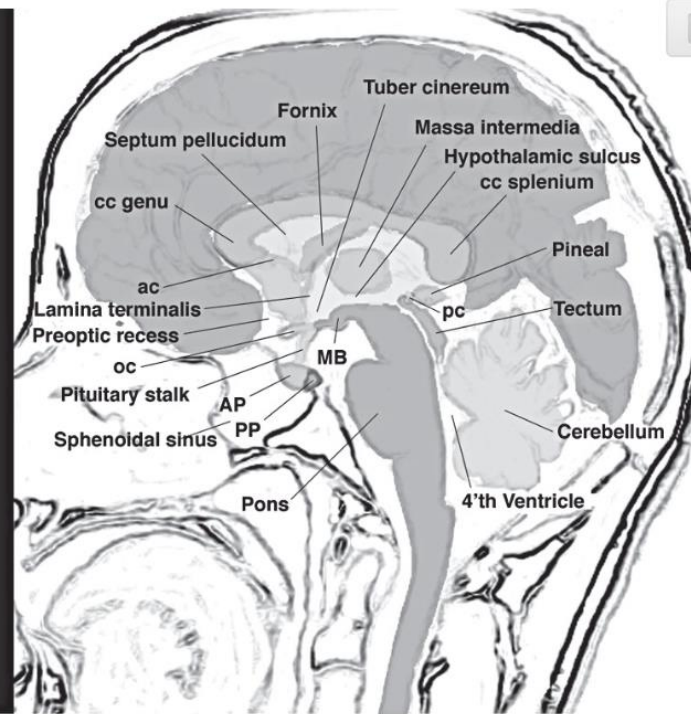
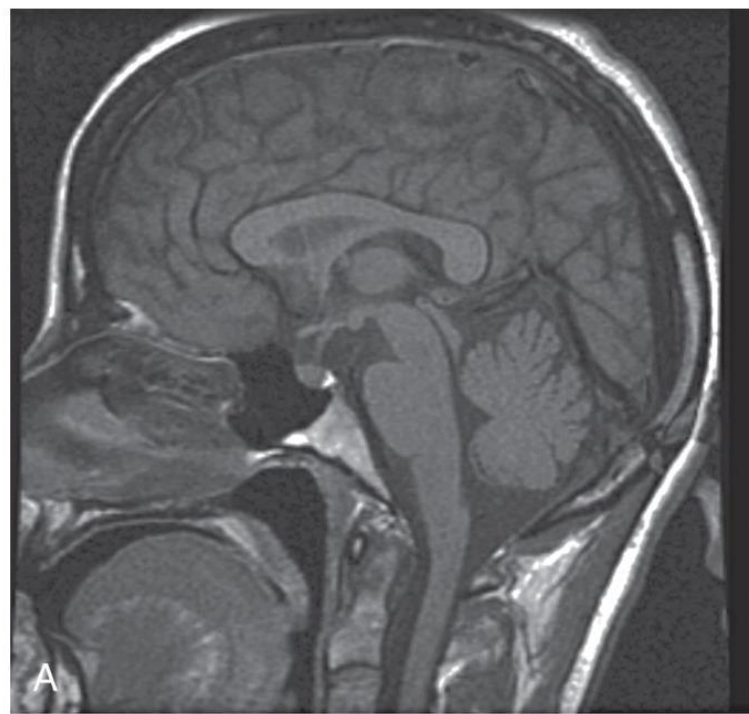
Anterior
Pituitary Gland

Hypothalamic Projection Neuron

Location: **PVH**
(AVP, OXY)
LHA
(MCH, ORX)
Arc
(POMC, AgRP)



Neuronal Targets



Paraventricular Nucleus	Arcuate Nucleus
<i>Magnicellular Division</i>	Acetylcholine
Angiotensin II	γ -Aminobutyric acid (GABA)
Cholecystokinin (CCK)	Agouti-related peptide (AgRP)
Dynorphins	Cocaine- and amphetamine-regulated transcript (CART)
Nitric oxide (NO)	Dopamine
Oxytocin	Dynorphin
Vasopressin (AVP)	Endocannabinoids
<i>Parvicellular Divisions</i>	Enkephalins
γ -Aminobutyric acid (GABA)	Galanin
Angiotensin II	Galanin-like peptide (GALP)
Atrial natriuretic factor (ANF)	Glutamate
Bombesin-like peptides	Gonadotropin-releasing hormone (GnRH)
Cholecystokinin (CCK)	Growth hormone-releasing hormone (GHRH)
Corticotropin-releasing hormone (CRH)	Kisspeptins
Dopamine	Melanocortins (ACTH, α -MSH, β -MSH, γ -MSH)
Endocannabinoids	Neurokinin B (NKB)
Enkephalins	Neuromedin U
Galanin	Neuropeptide Y (NPY)
Glutamate	Neurotensin
Interleukin-1 (IL-1)	Nociceptin/orphanin FQ (OFQ)
Neuropeptide Y (NPY)	Opioids (β -endorphin) peptides
Neurotensin	Pancreatic polypeptide
Nitric oxide (NO)	Prolactin
RFamide-related peptides (RFRP)	Pro-opiomelanocortin
Somatostatin	Pyro-glutamyl-RFamide peptide (QRFP)
Thyrotropin-releasing hormone (TRH)	Somatostatin
Vasopressin (AVP)	Substance P
Vasoactive intestinal peptide (VIP)	