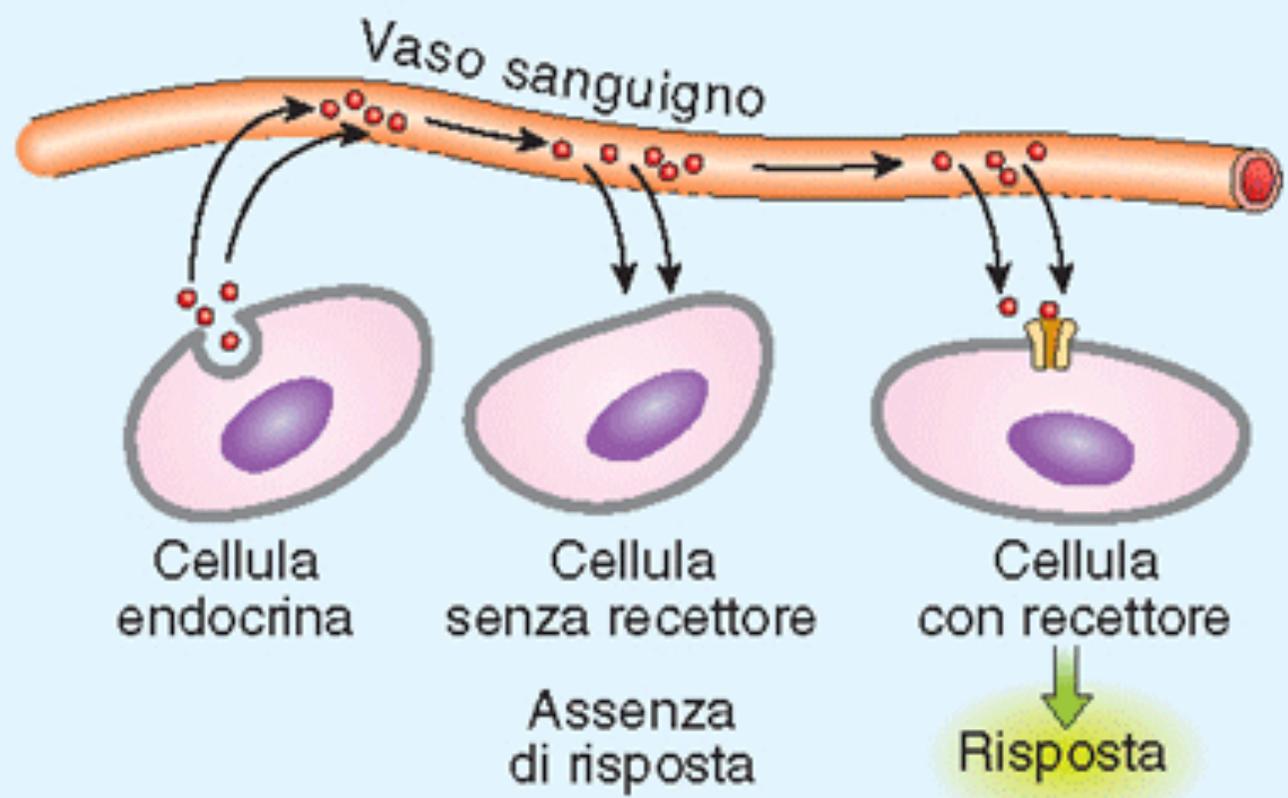
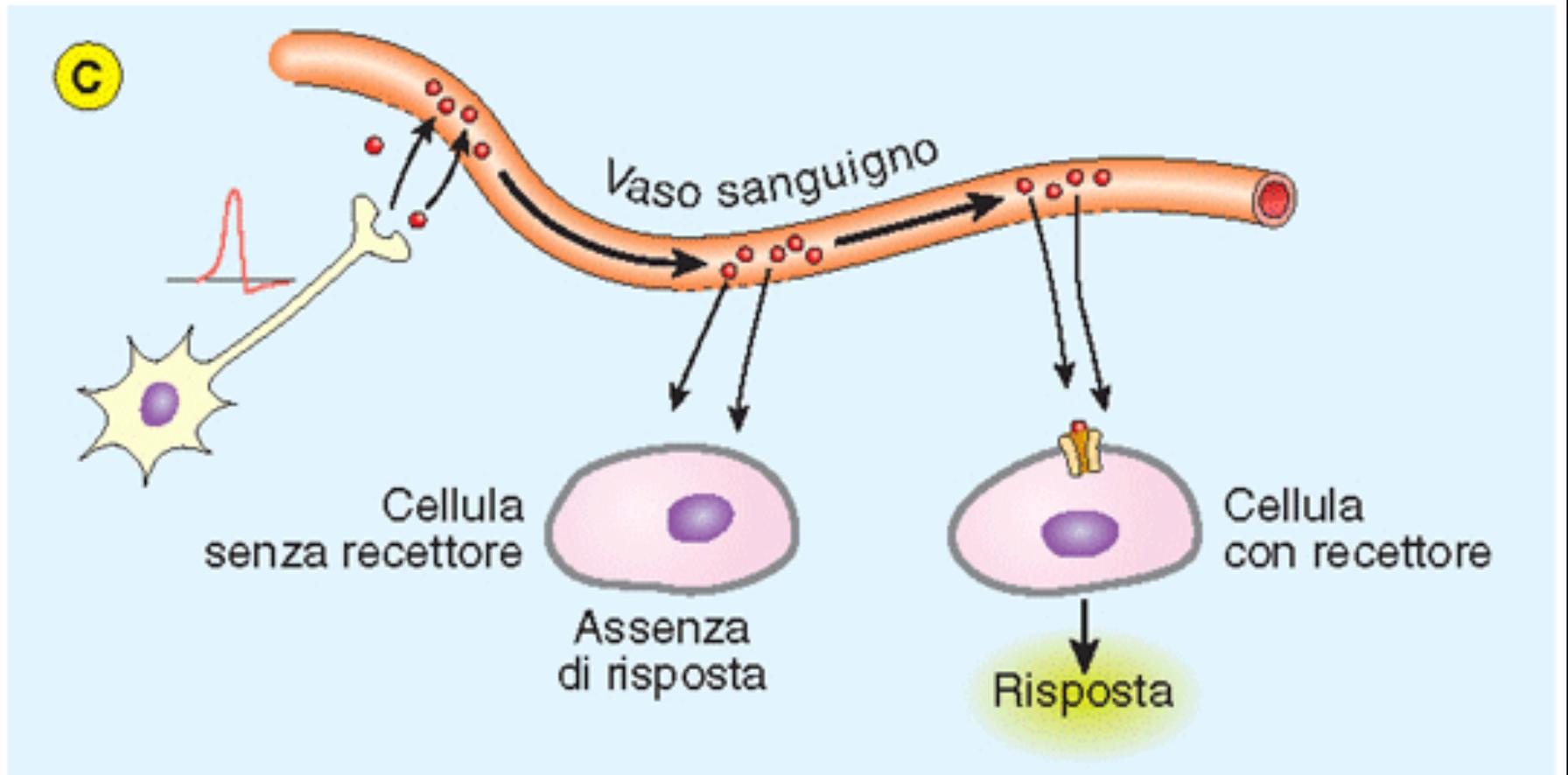


B

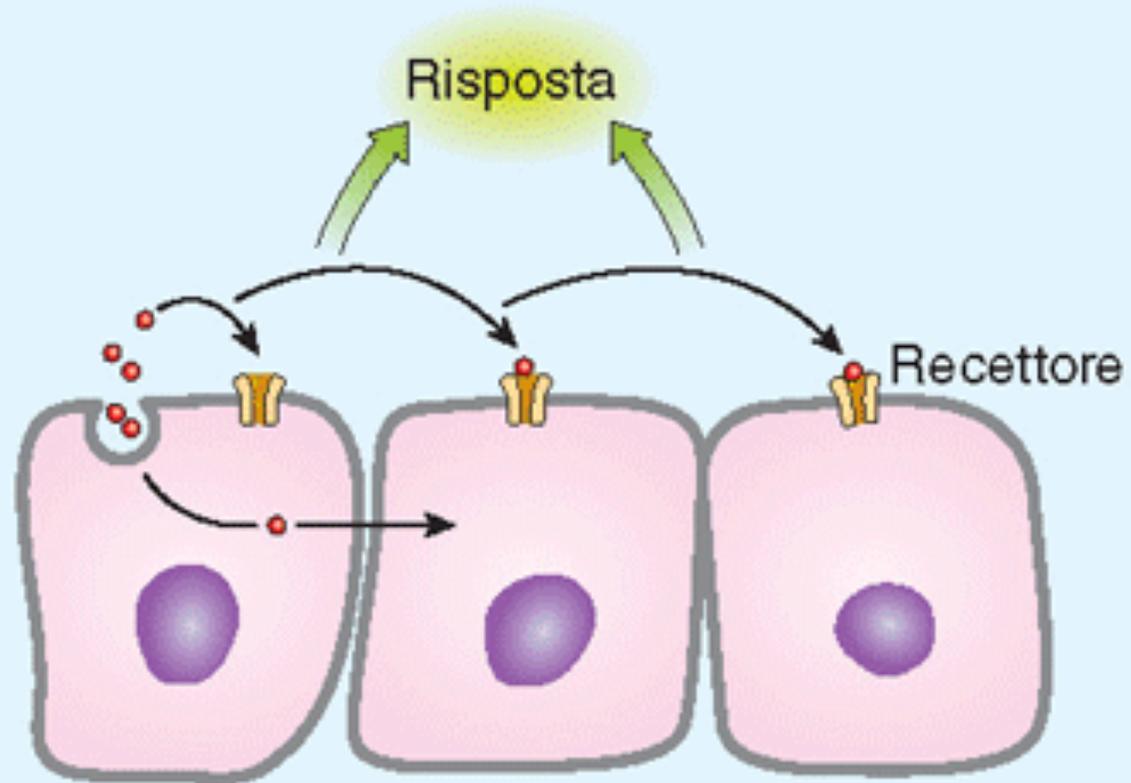


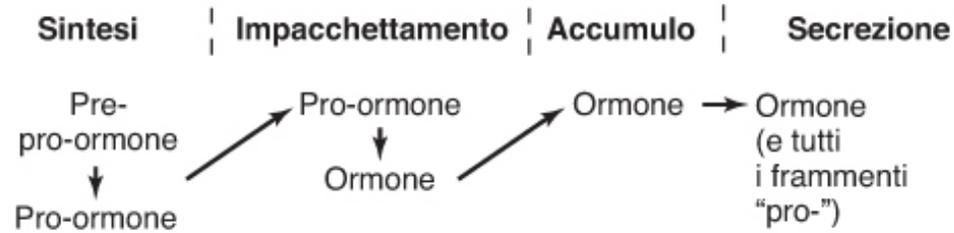
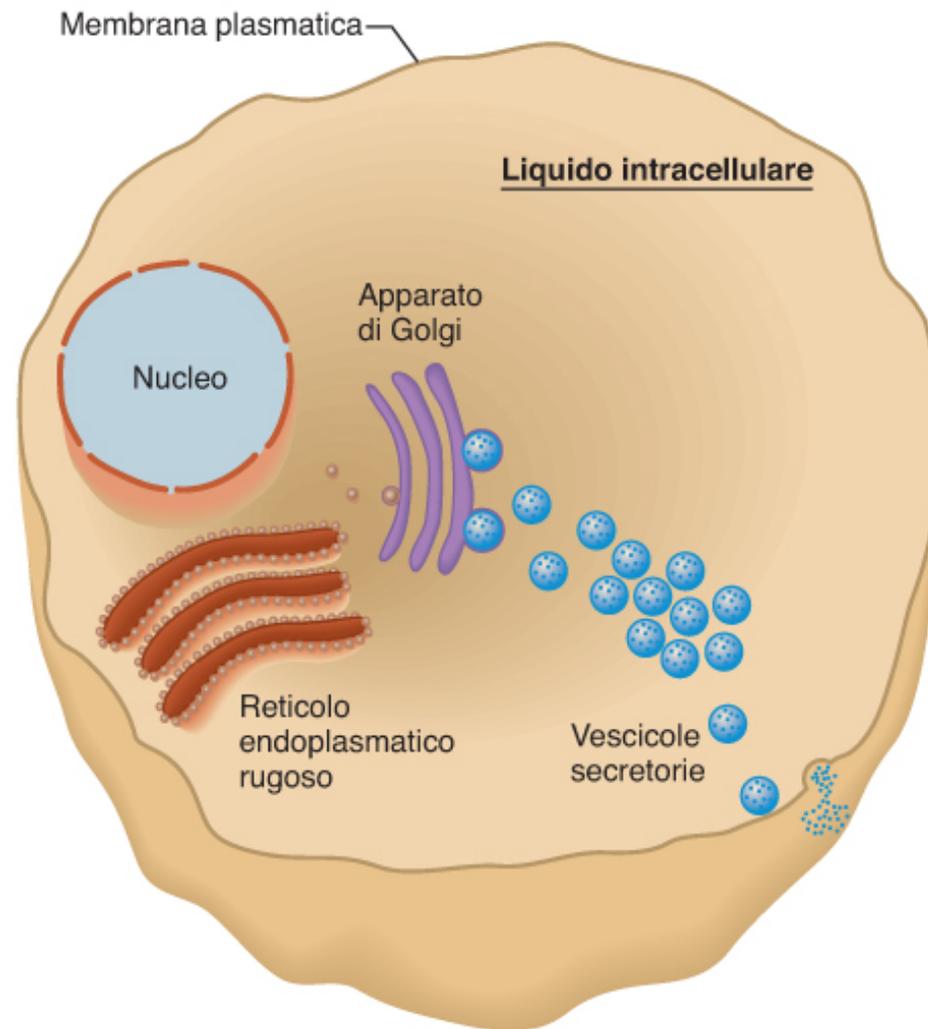
CELLULE NEUROENDOCRINE

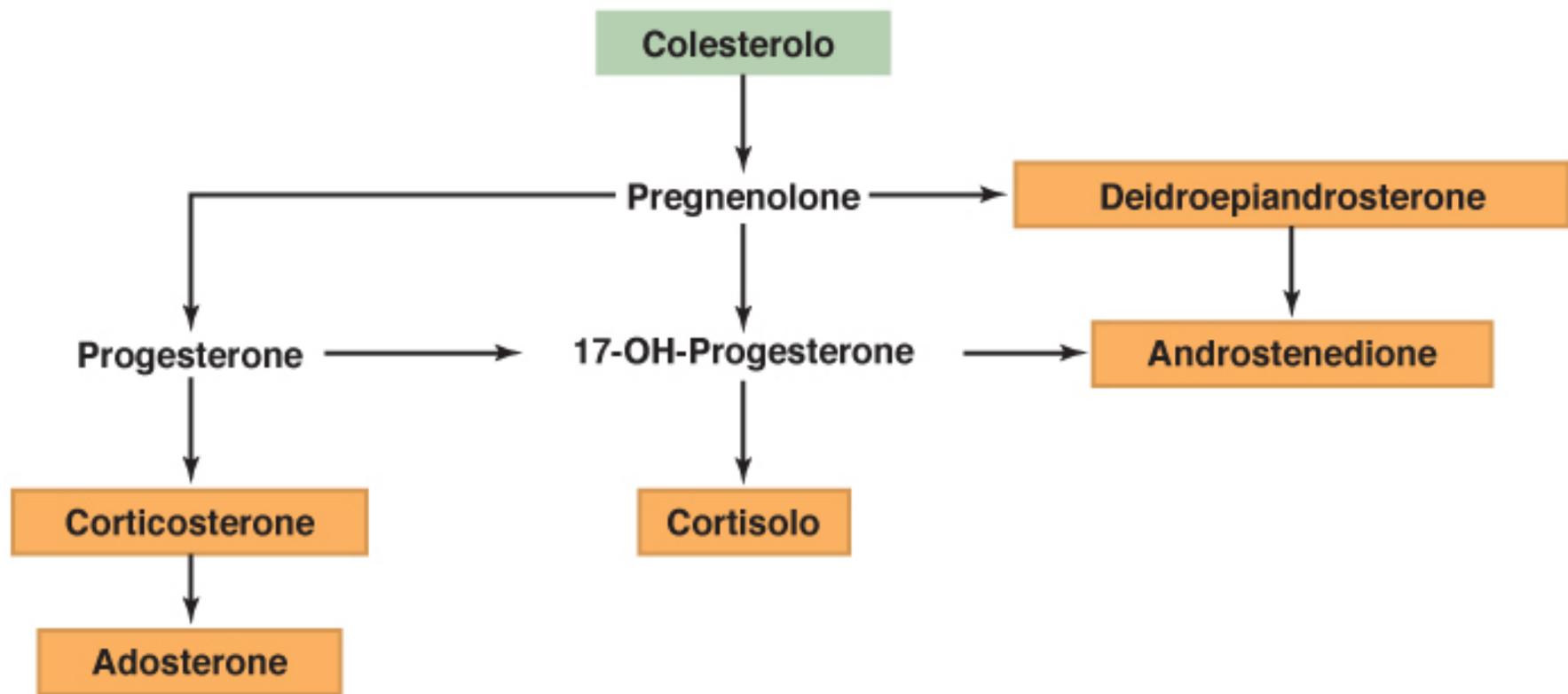


SOSTANZE PARACRINE e SOSTANZE AUTOCRINE

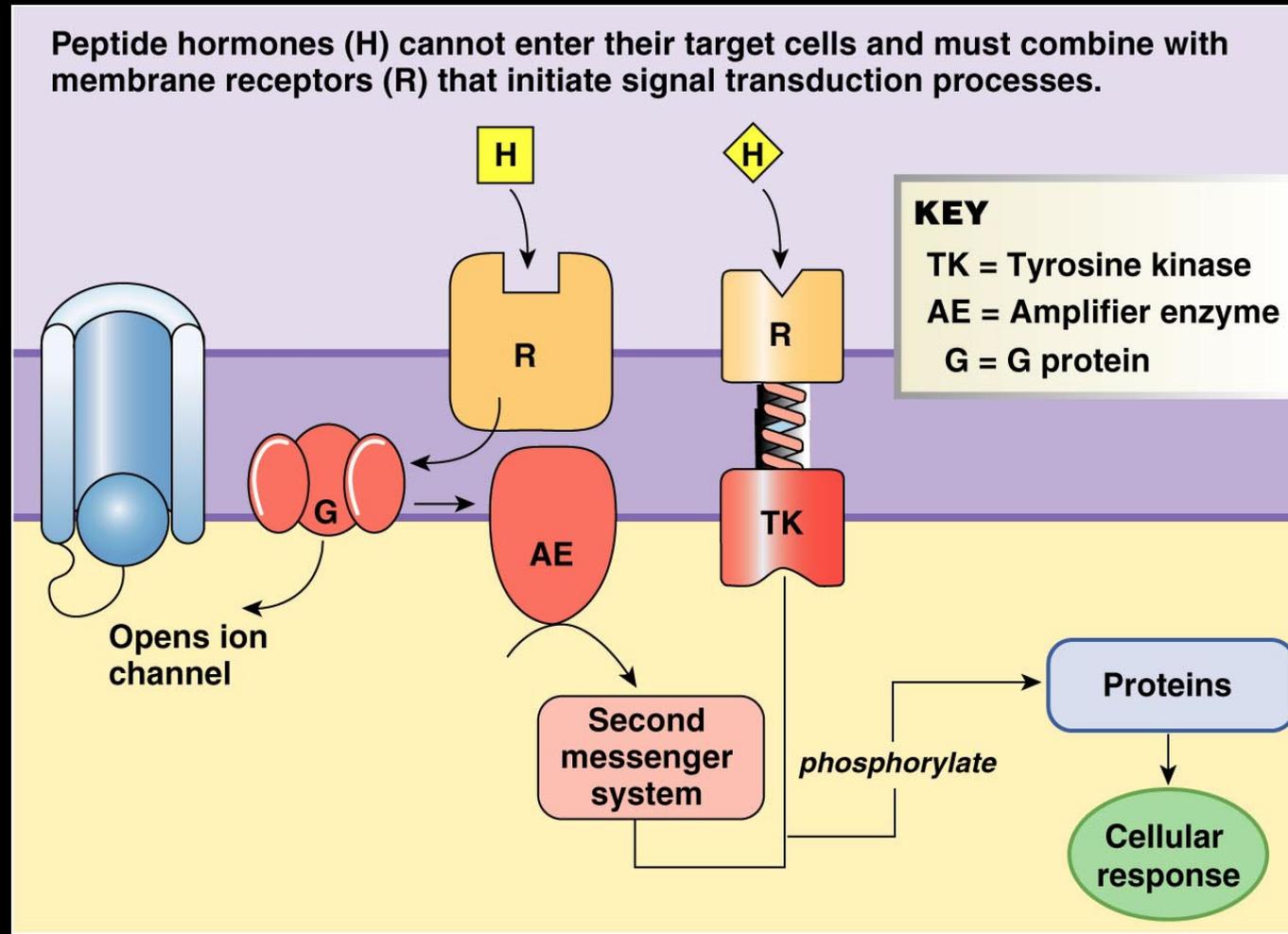
D





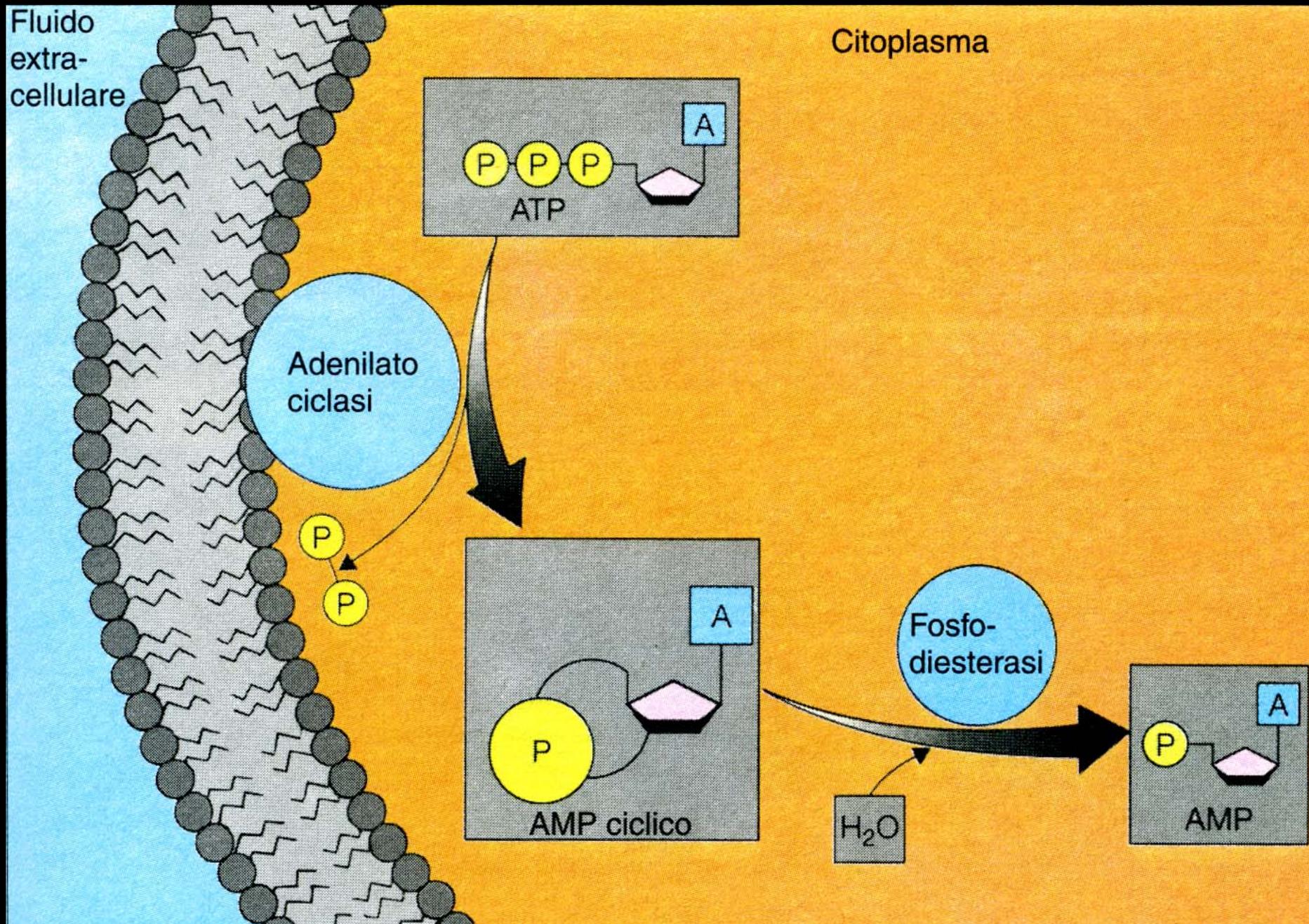


MECCANISMI D'AZIONE DEGLI ORMONI NON LIPOSOLUBILI

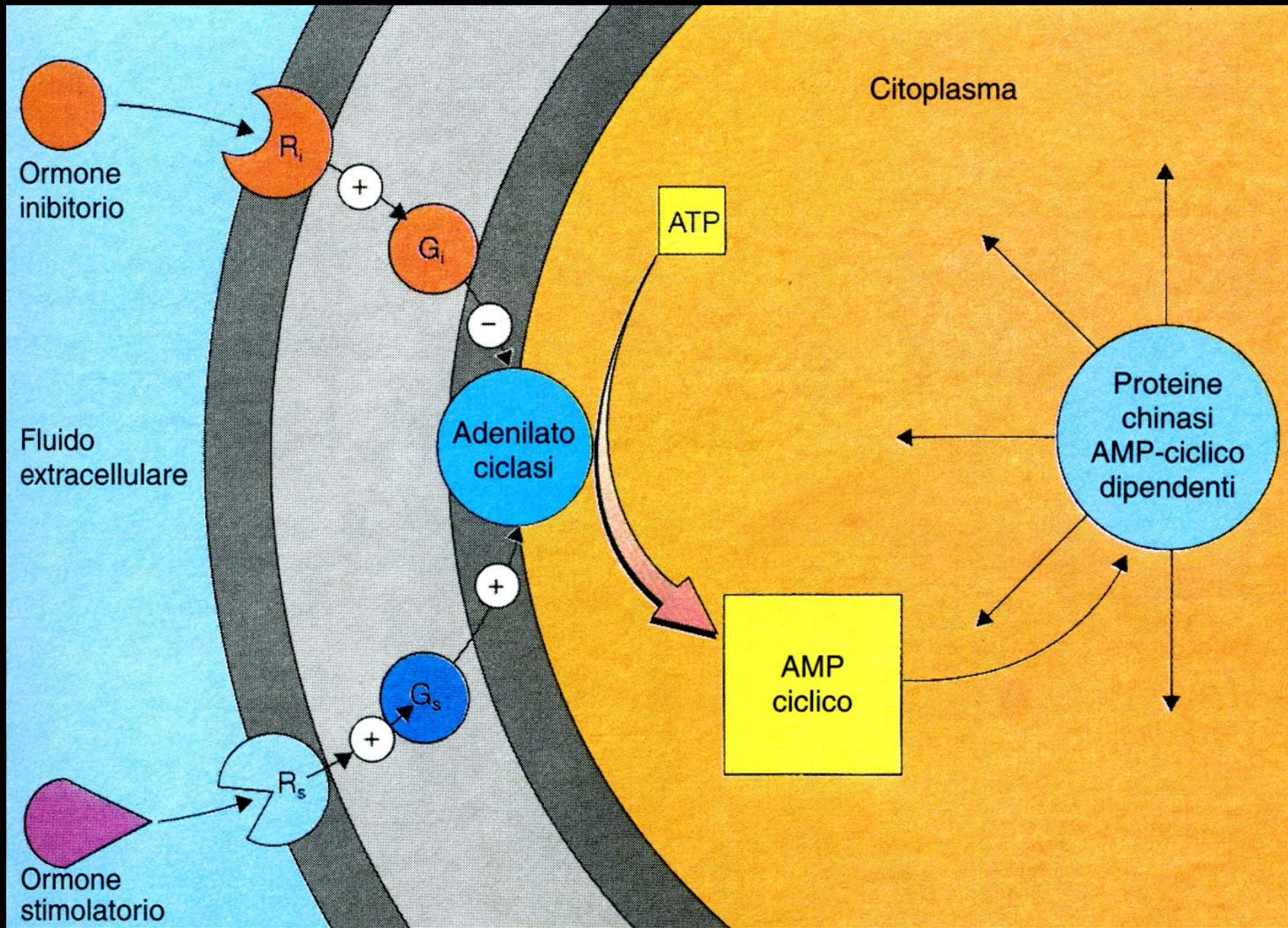


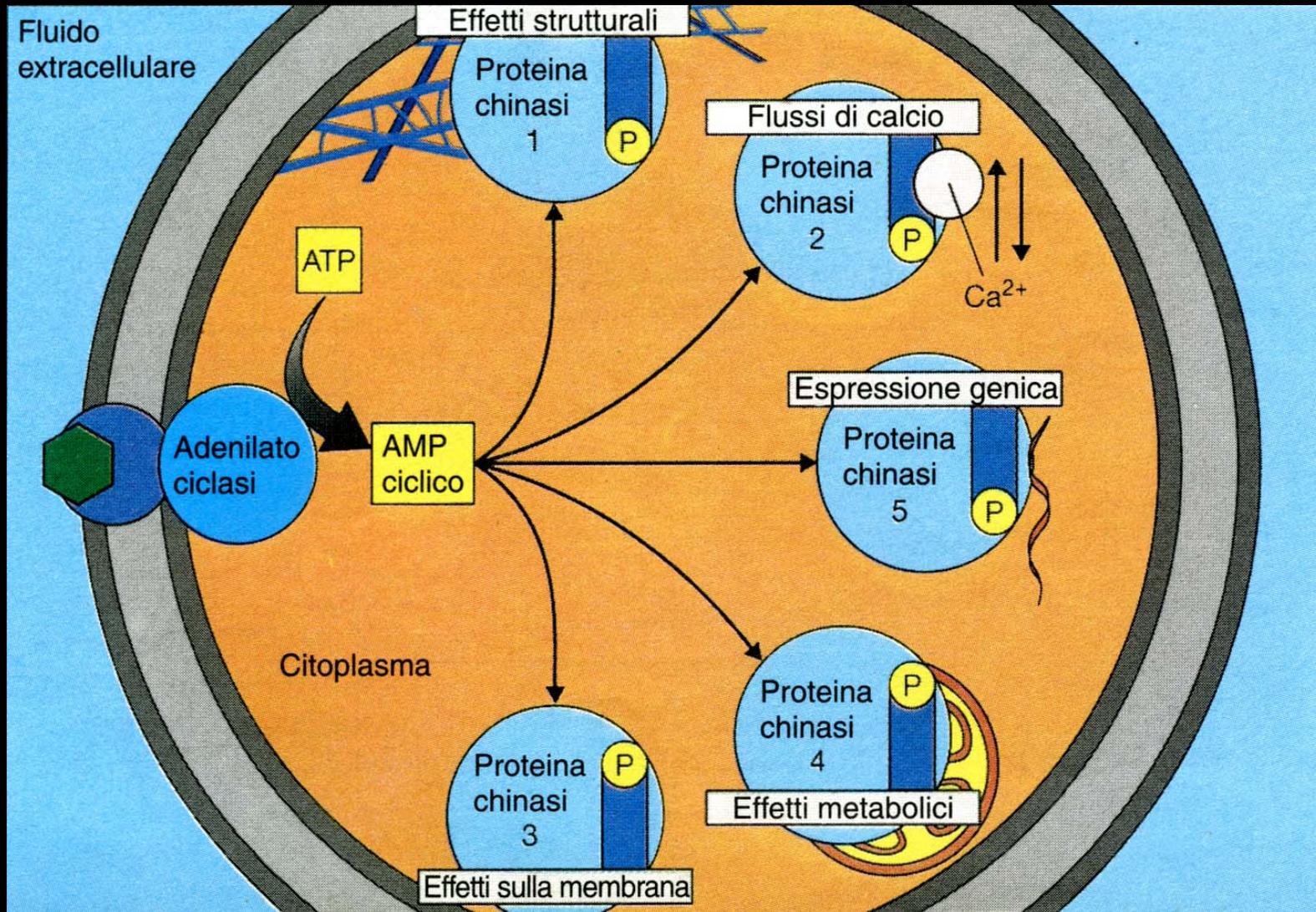
- 3 sistemi di secondi messaggeri:
- Adenilato ciclasi-AMPC
- Fosfatidilinositolo e Diacilglicerolo
- Canali ionici attivati dal recettore

Secondo messaggero: AMPc



Secondo messaggero: AMPc PROTEINA G





Secondo messaggero: AMPc

Tabella 12-3

*Alcuni ormoni che usano il cAMP come secondo messaggero**

Ormone

Tessuto bersaglio

Ormone adrenocorticotropo (ACTH)

Corticale surrenale

Adrenalina

Cuore, muscolo scheletrico, grasso

Glucagone

Fegato

Ormone luteinizzante (LH)

Testicoli ed ovaie

Ormone paratiroideo (PTH)

Rene ed osso

Ormone stimolante la tiroide (TSH)

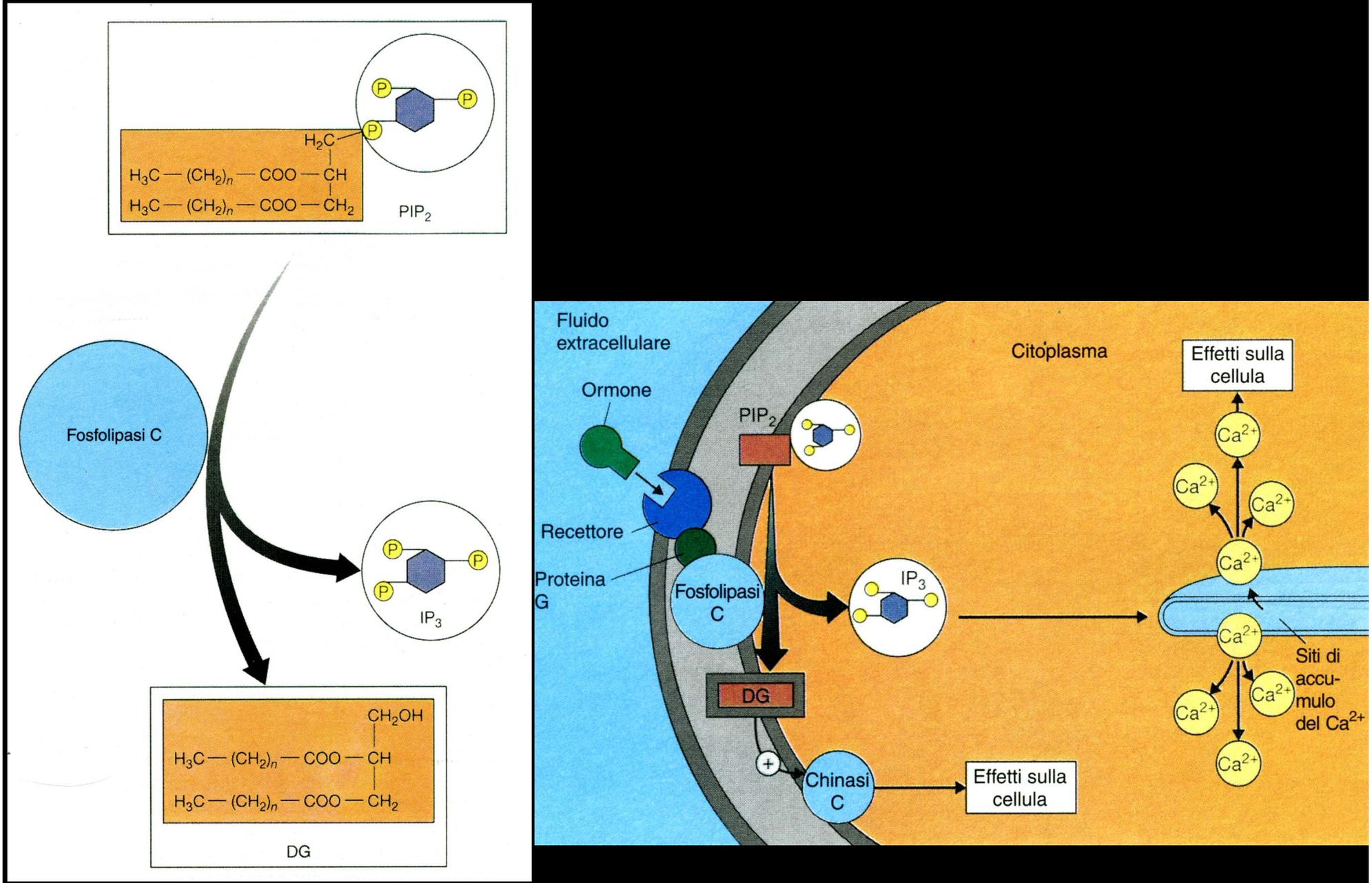
Ghiandola tiroide

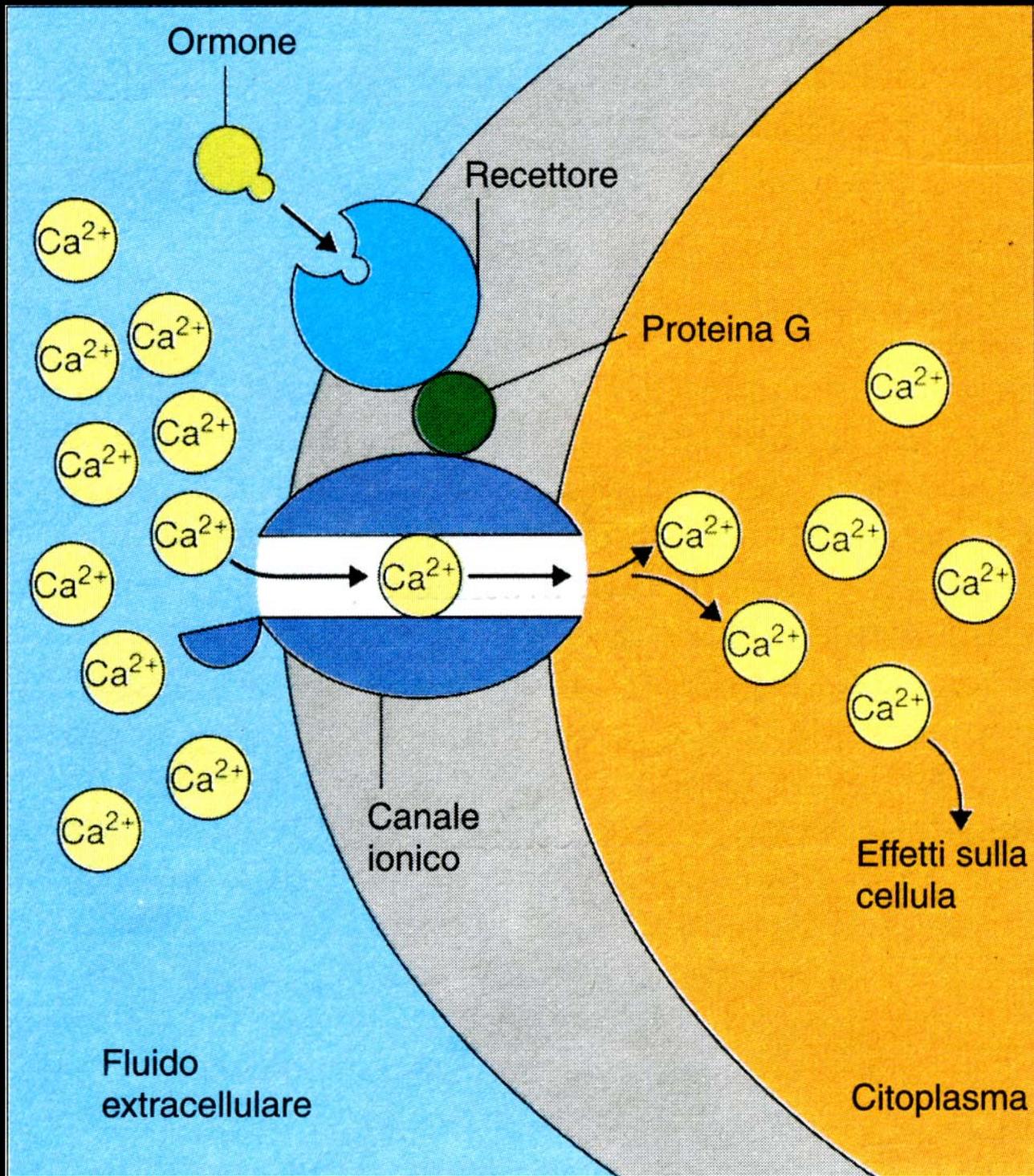
Ormone follicolostimolante (FSH)

Testicoli ed ovaie

Secondo messaggero: IP3, DAG

Interazione con il recettore → proteina Gs → attivazione della fosfolipasi C





Secondo messaggero: ioni

Steroid Hormones: Action

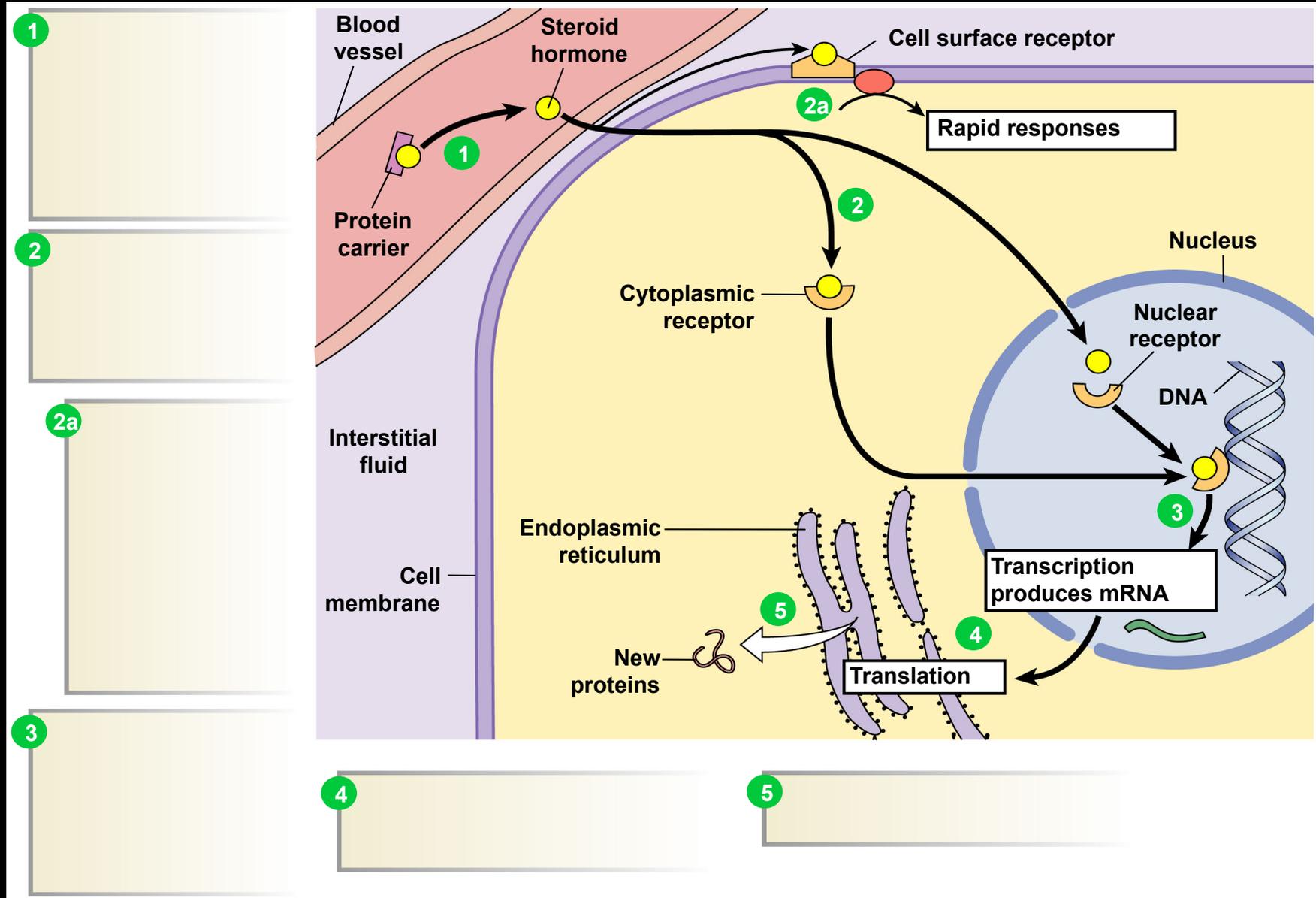


Figure 7-7, steps 1-5

Table 7.1 Comparison of Peptide, Steroid, and Amino Acid-Derived Hormones

Table
7.1

Comparison of Peptide, Steroid, and Amino Acid-Derived Hormones

	Peptide Hormones	Steroid Hormones	Amine Hormones (Tyrosine Derivatives)	
			Catecholamines	Thyroid Hormones
Synthesis and storage	Made in advance; stored in secretory vesicles	Synthesized on demand from precursors	Made in advance; stored in secretory vesicles	Made in advance; precursor stored in secretory vesicles
Release from parent cell	Exocytosis	Simple diffusion	Exocytosis	Simple diffusion
Transport in blood	Dissolved in plasma	Bound to carrier proteins	Dissolved in plasma	Bound to carrier proteins
Half-life	Short	Long	Short	Long
Location of receptor	Cell membrane	Cytoplasm or nucleus; some have membrane receptors also	Cell membrane	Nucleus
Response to receptor-ligand binding	Activation of second messenger systems; may activate genes	Activation of genes for transcription and translation; may have nongenomic actions	Activation of second messenger systems	Activation of genes for transcription and translation
General target response	Modification of existing proteins and induction of new protein synthesis	Induction of new protein synthesis	Modification of existing proteins	Induction of new protein synthesis
Examples	Insulin, parathyroid hormone	Estrogen, androgens, cortisol	Epinephrine, norepinephrine	Thyroxine (T ₄)

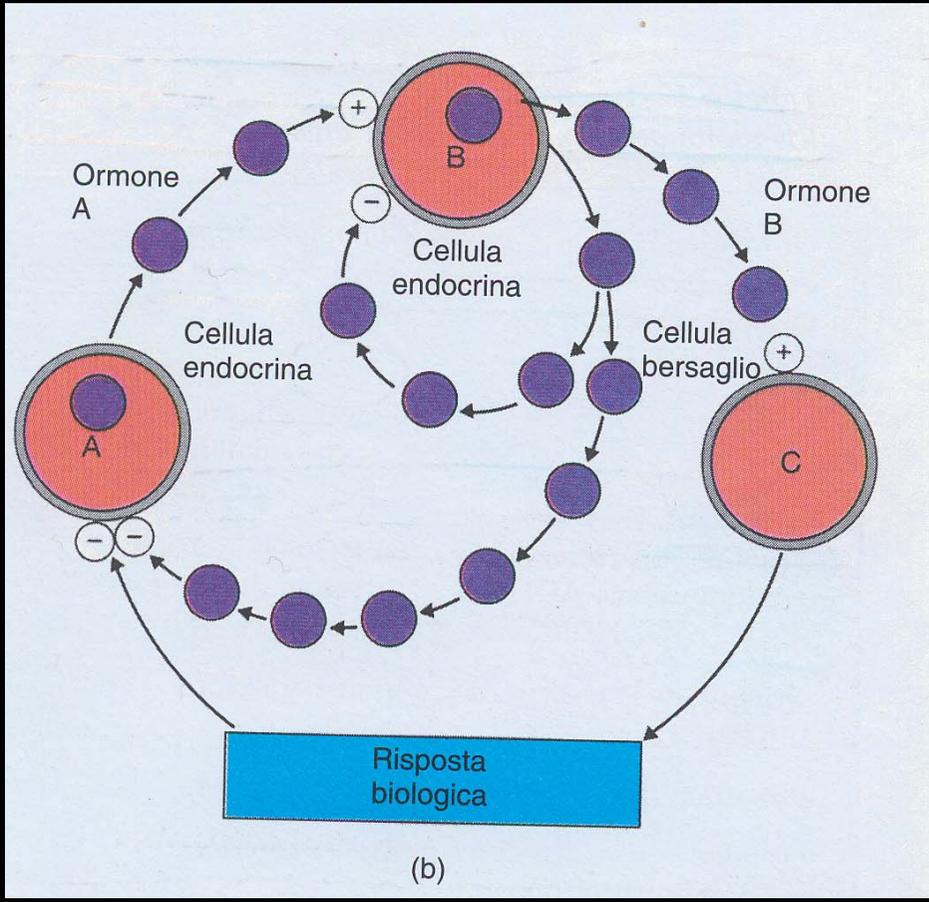
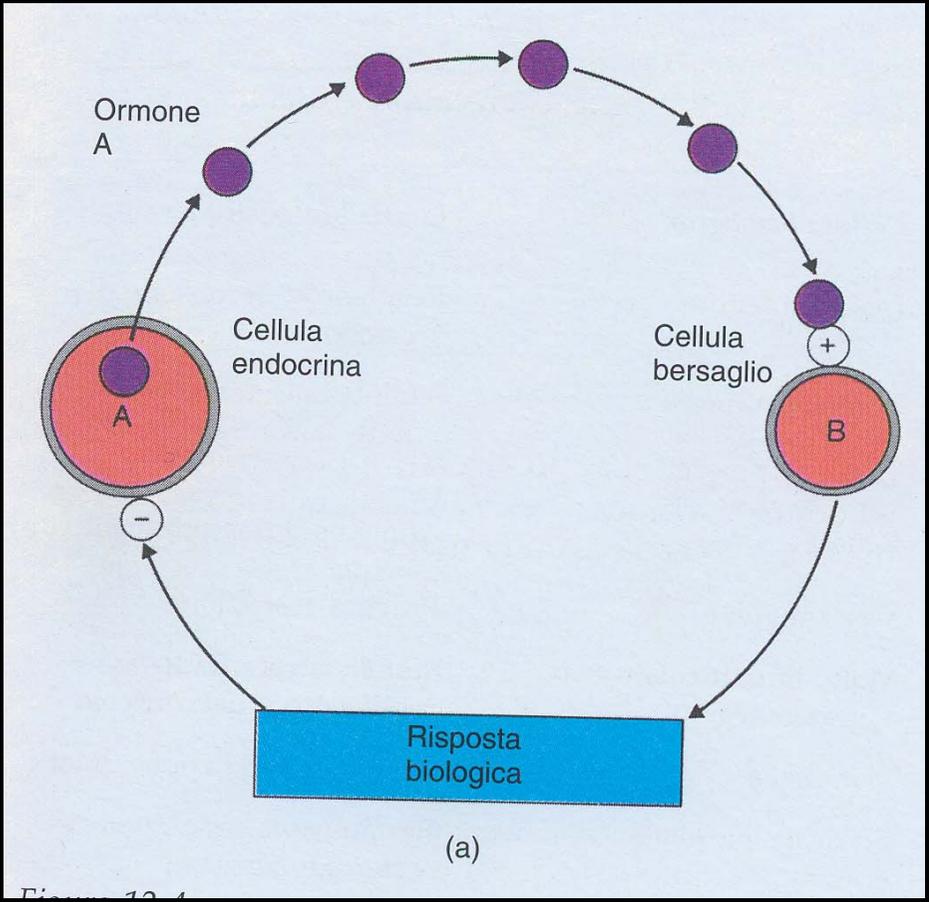
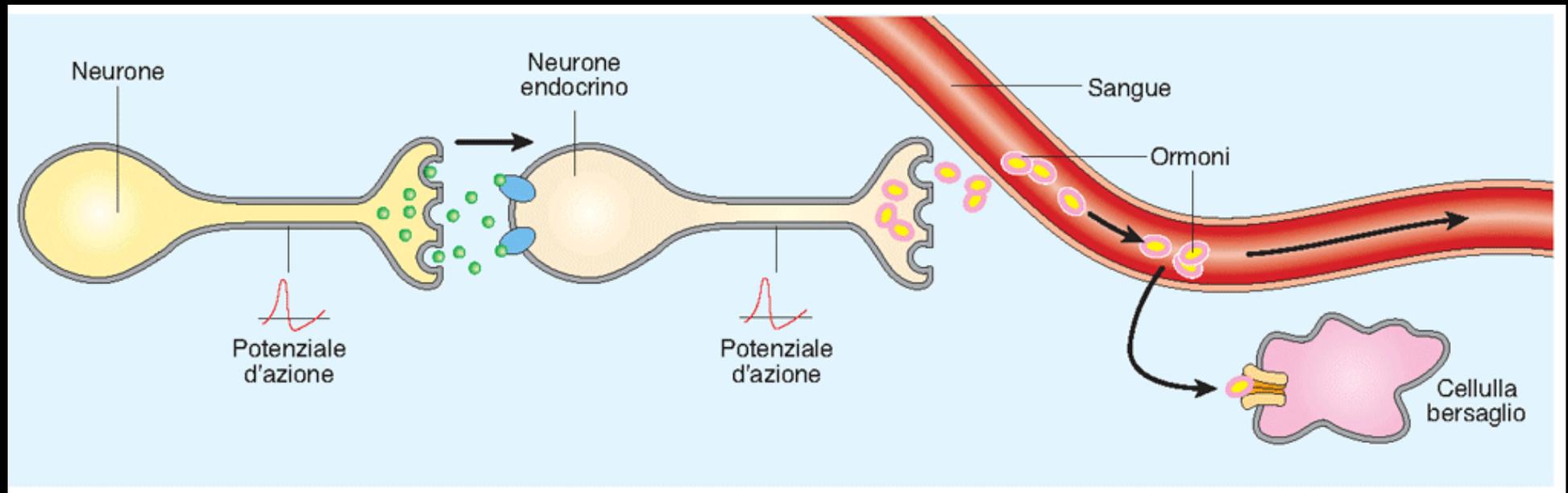


Figure 10.4

Neuroendocrinologia e funzioni della ghiandola ipofisaria

Cellule neuroendocrine



IPOFISI

3 lobi

Peduncolo ipofisario

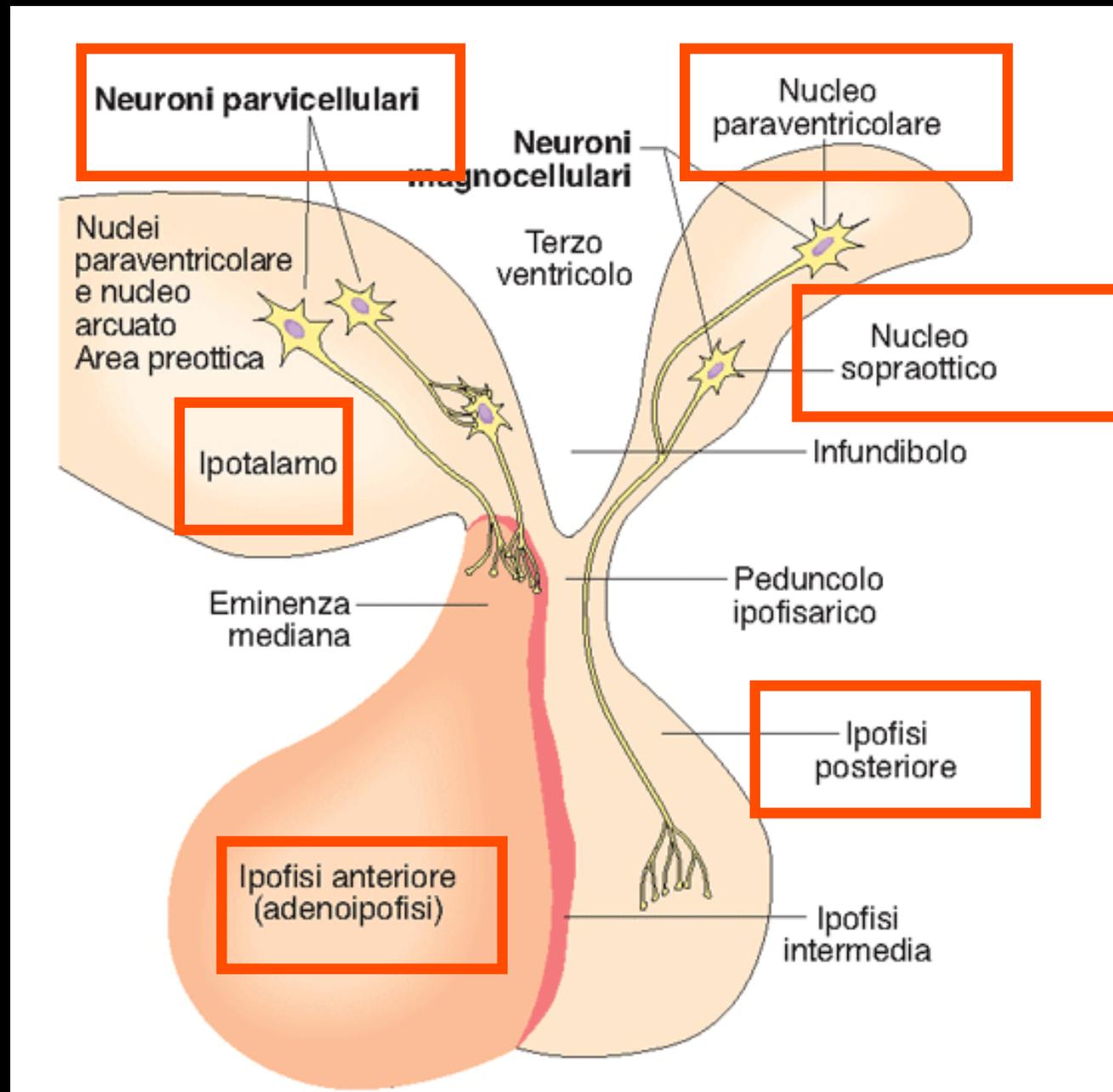


Tabella 13-1

Ormoni secreti dall'ipofisi

Ormoni secreti dal lobo anteriore

ormone luteinizzante (LH)

ormone follicolostimolante (FSH)

prolattina (PRL)

ormone adrenocorticotropo (ACTH)

ormone della crescita (GH)

ormone stimolante la tiroide (TSH)

Ormoni secreti dal lobo intermedio

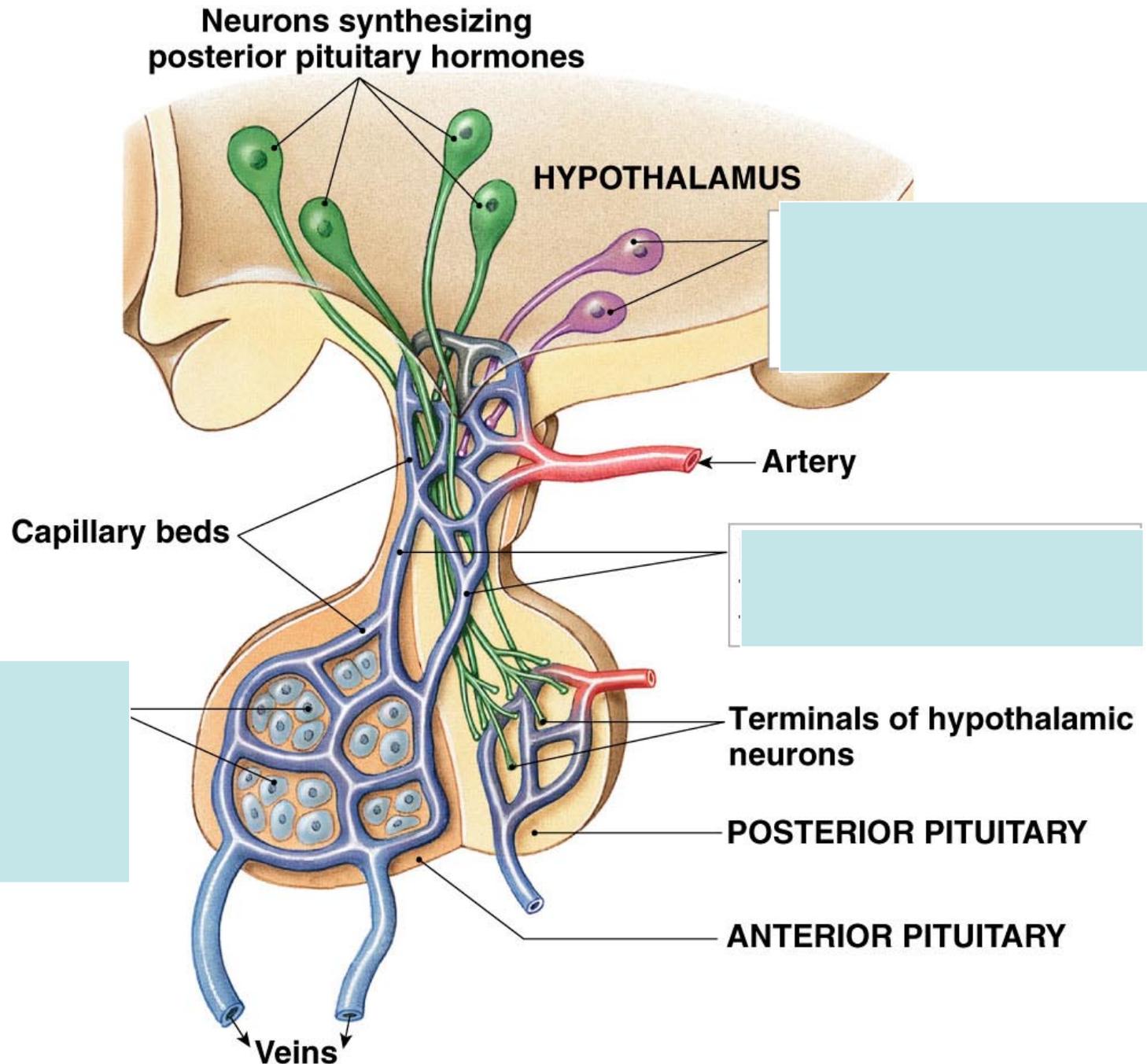
ormone stimolante i melanociti (MSH)

Ormoni secreti dal lobo posteriore

ossitocina

ormone antidiuretico (ADH, noto anche come vasopressina)

Sistema portale ipotalamo-ipofisario



ORMONI NEUROIPOFISARI

1) OSSITOCINA

2) ORMONE
ANTIDIURETICO
(ADH,
VASOPRESSINA)

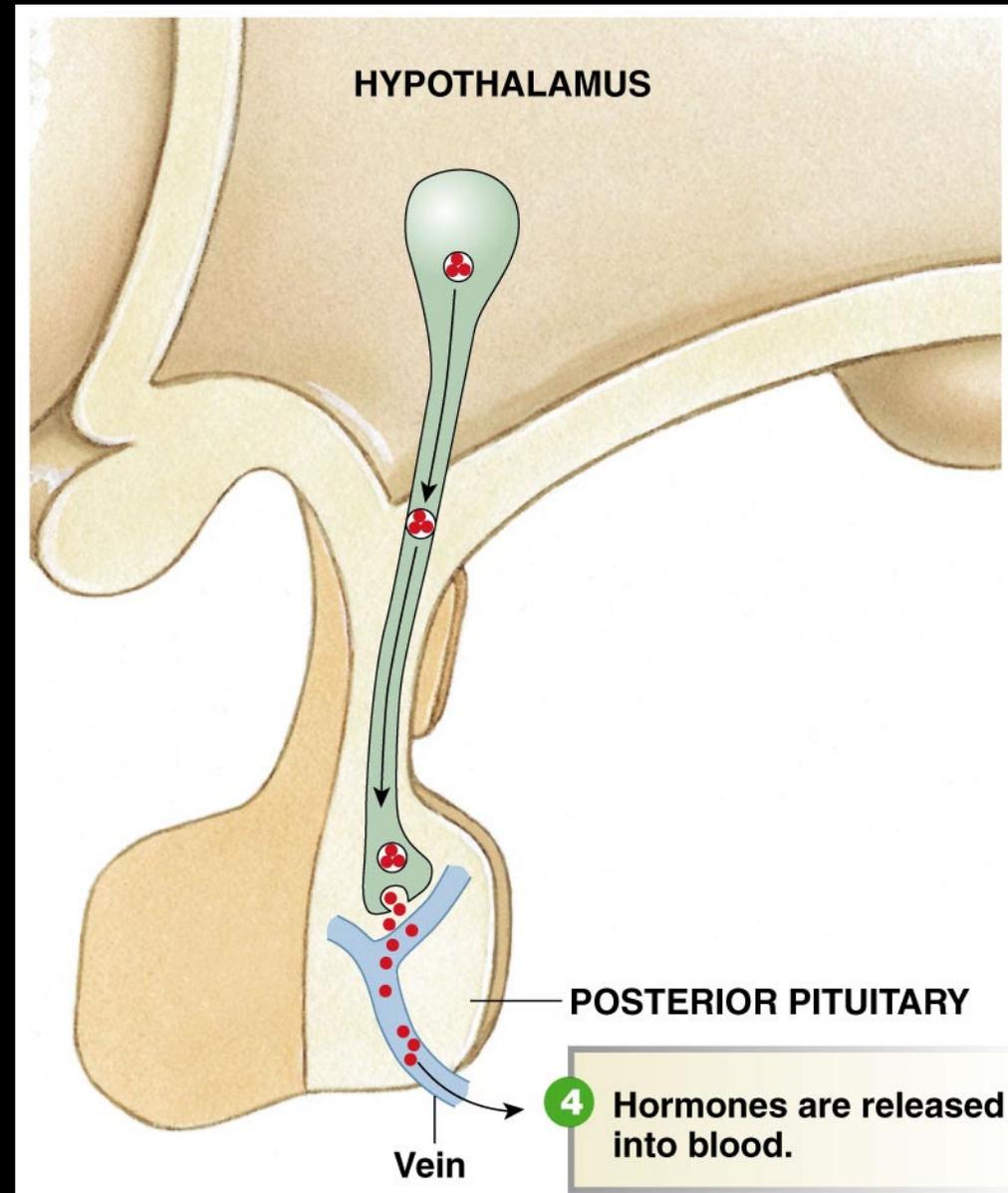
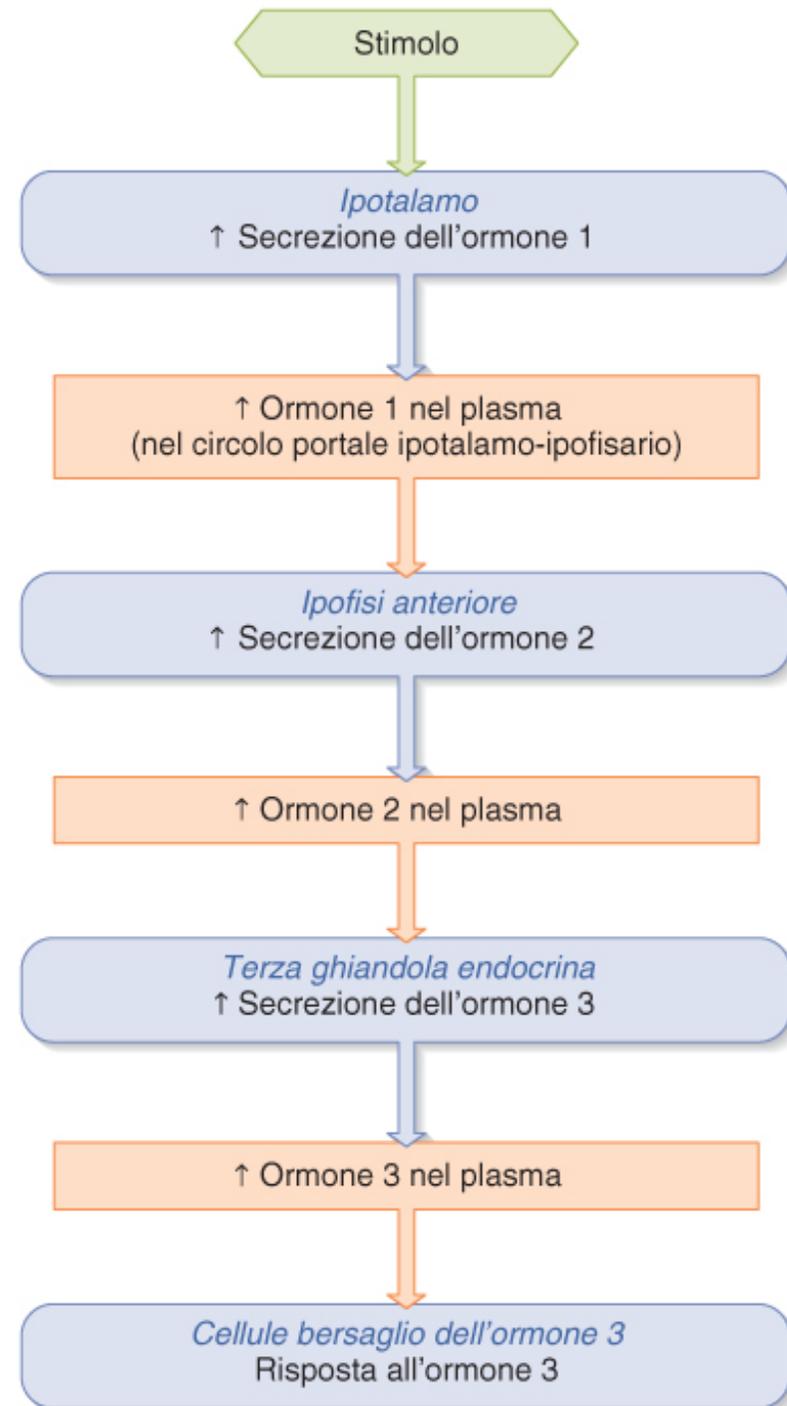
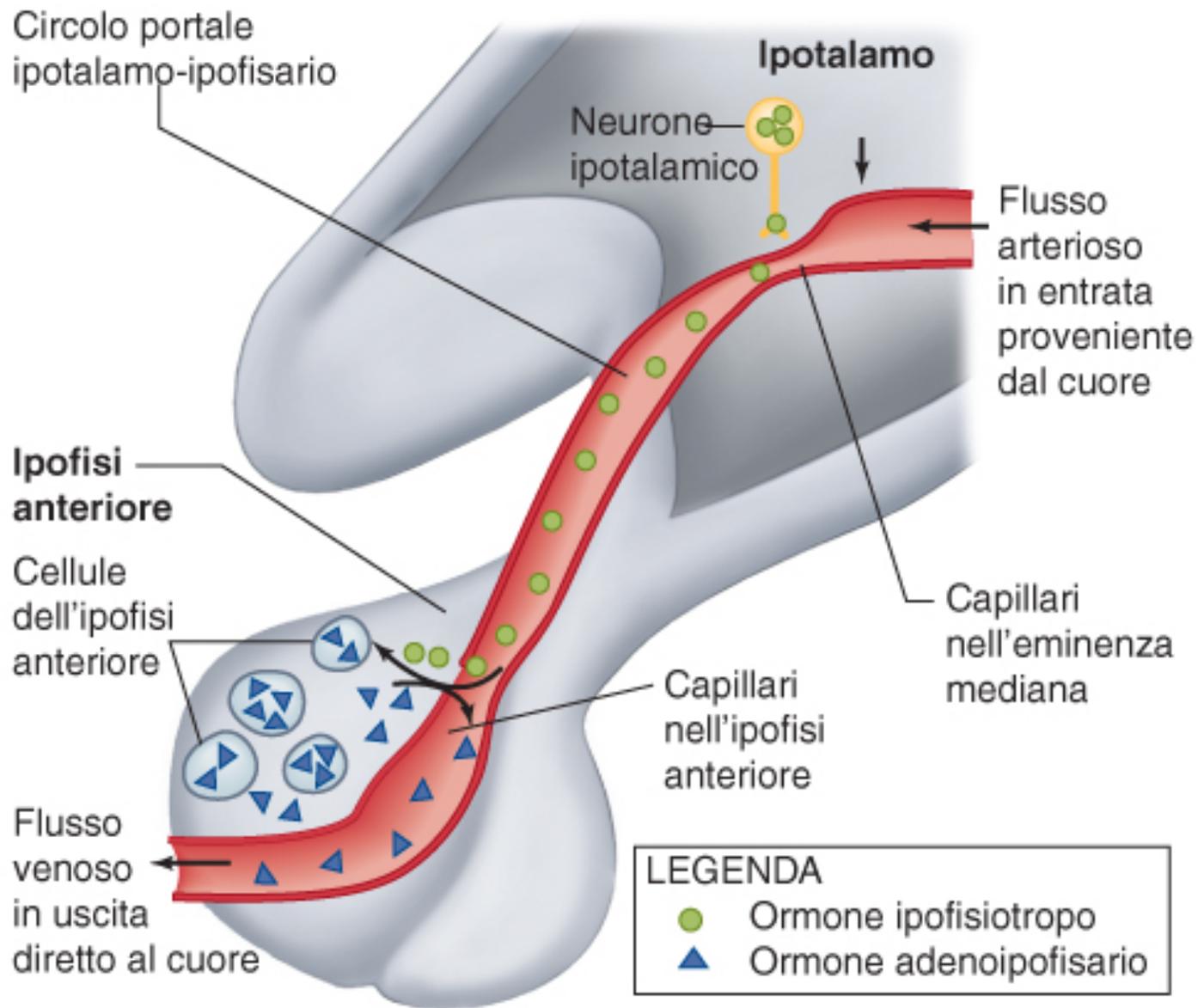


Figure 7-12 (4 of 4)





Neurons synthesizing posterior pituitary hormones

HYPOTHALAMUS

Neurons synthesizing trophic hormones release them into capillaries of the portal system.

Artery

Capillary beds

Portal vessels carry the trophic hormones directly to the anterior pituitary.

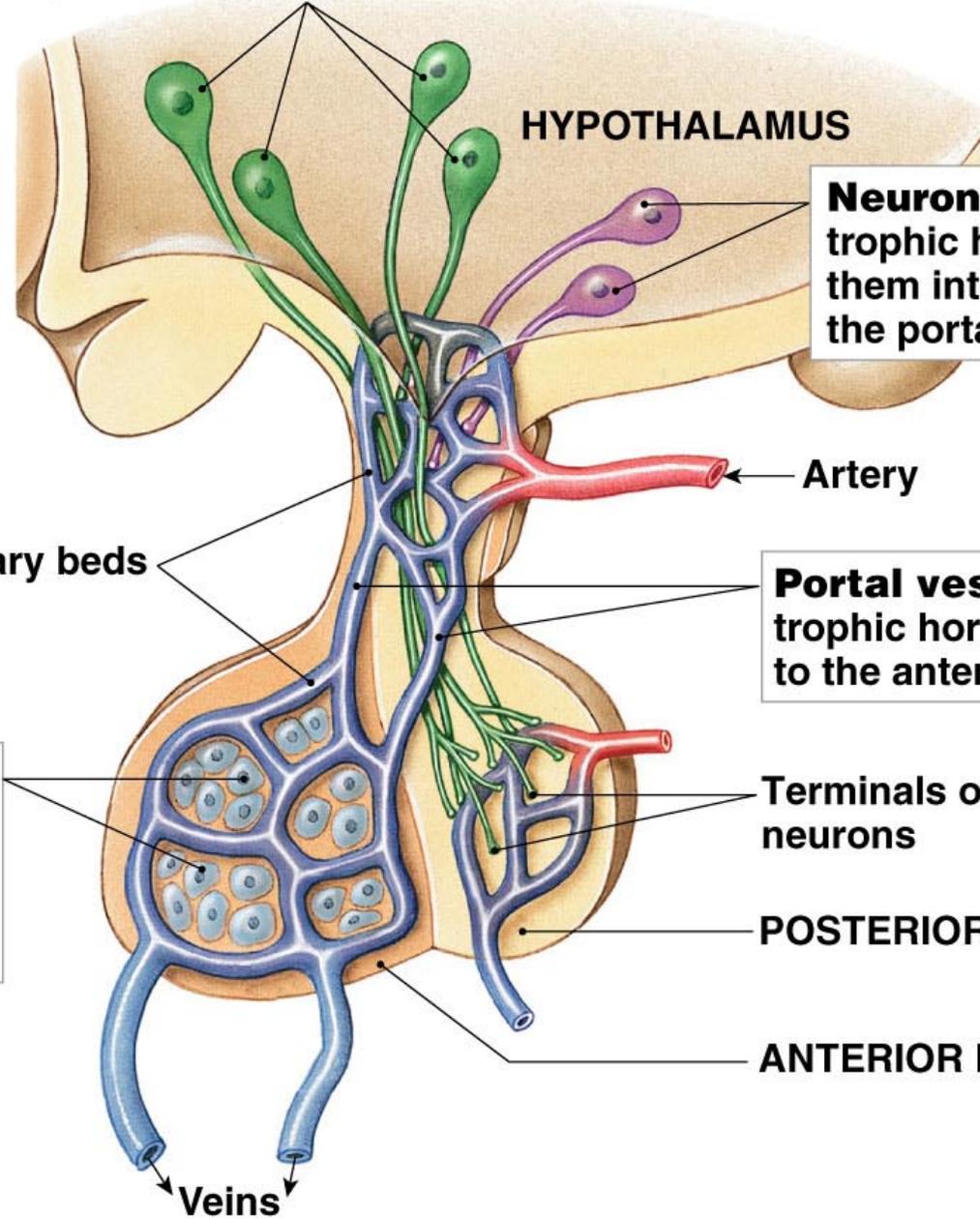
Endocrine cells release their hormones into the second set of capillaries for distribution to the rest of the body.

Terminals of hypothalamic neurons

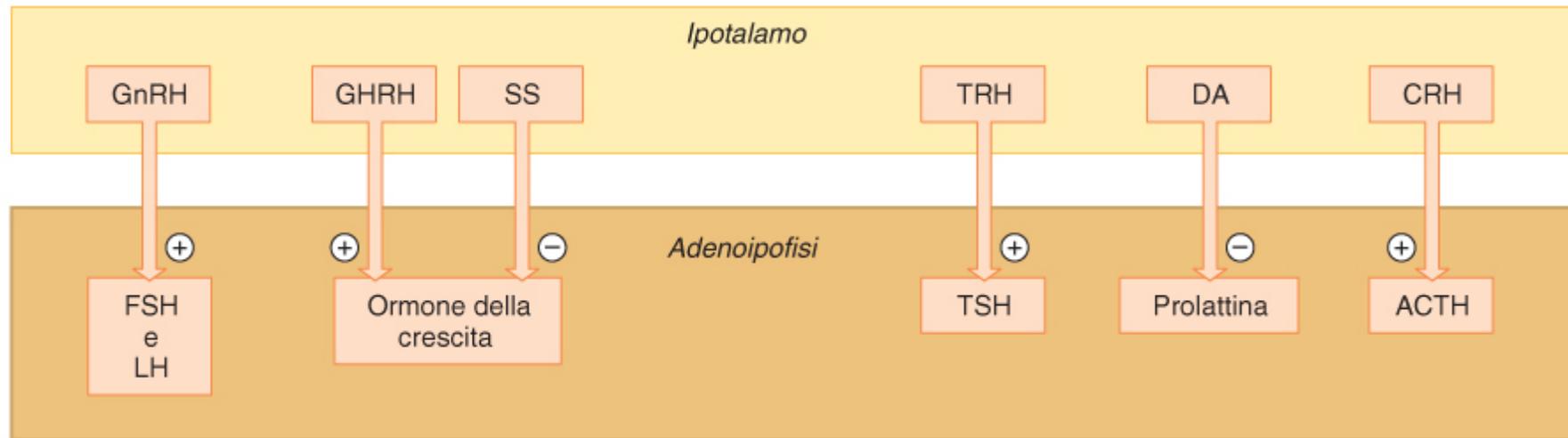
POSTERIOR PITUITARY

ANTERIOR PITUITARY

Veins

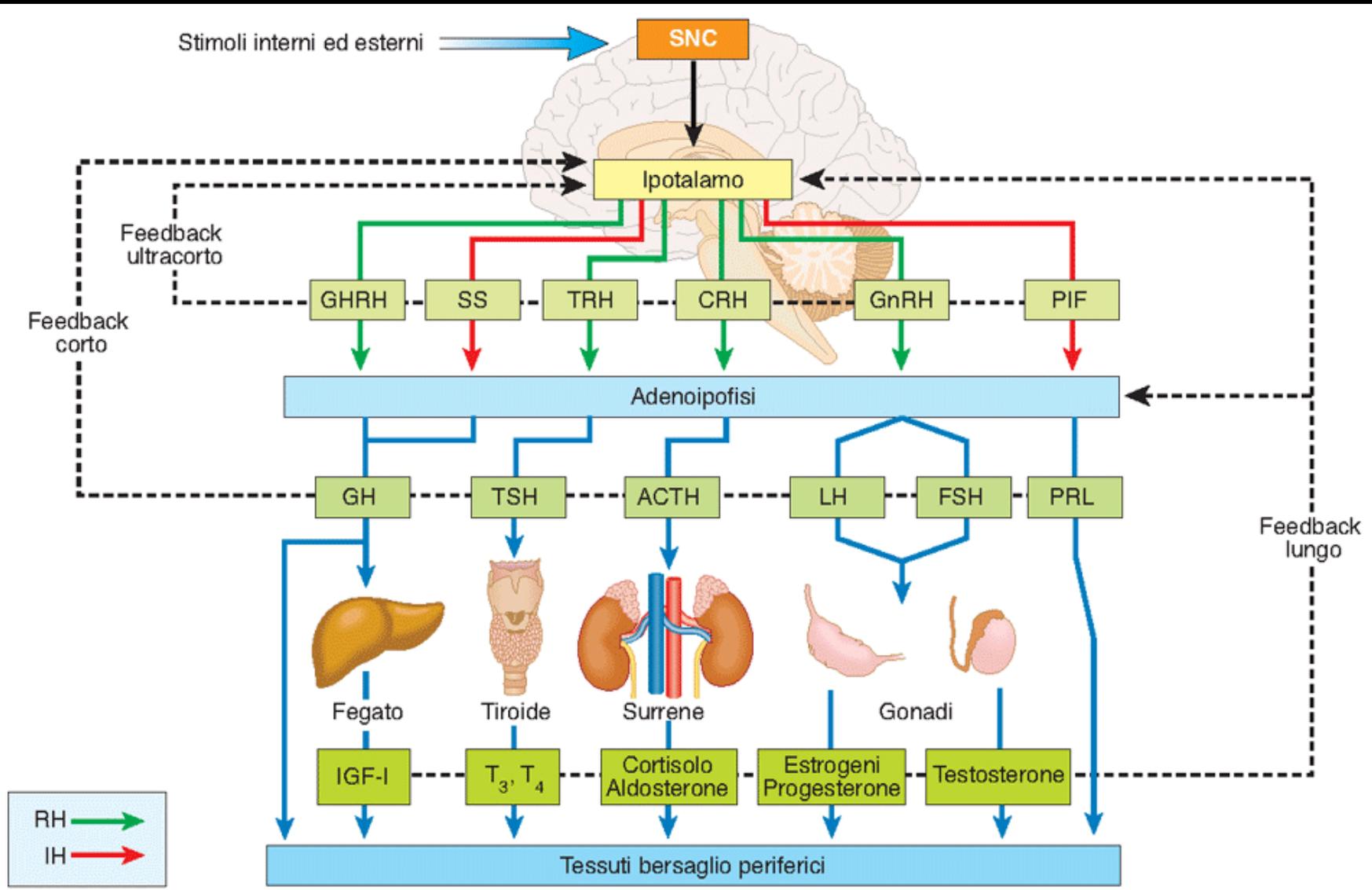


Regolazione della secrezione degli ormoni ipofisari da parte dell'ipotalamo: fattori liberanti ed inibenti



Principali ormoni ipofisotropi	Principali funzioni sull'adenipofisi
Ormone di liberazione della corticotropina (CRH)	Stimola il rilascio di ACTH
Ormone di liberazione della tireotropina (TRH)	Stimola il rilascio di TSH
Ormone di liberazione dell'ormone della crescita (GHRH)	Stimola il rilascio di GH
Somatostatina (SS)	Inibisce la secrezione di GH
Ormone di liberazione delle gonadotropine (GnRH)	Stimola la secrezione di LH e FSH
Dopamina (DA)*	Inibisce la secrezione di prolattina

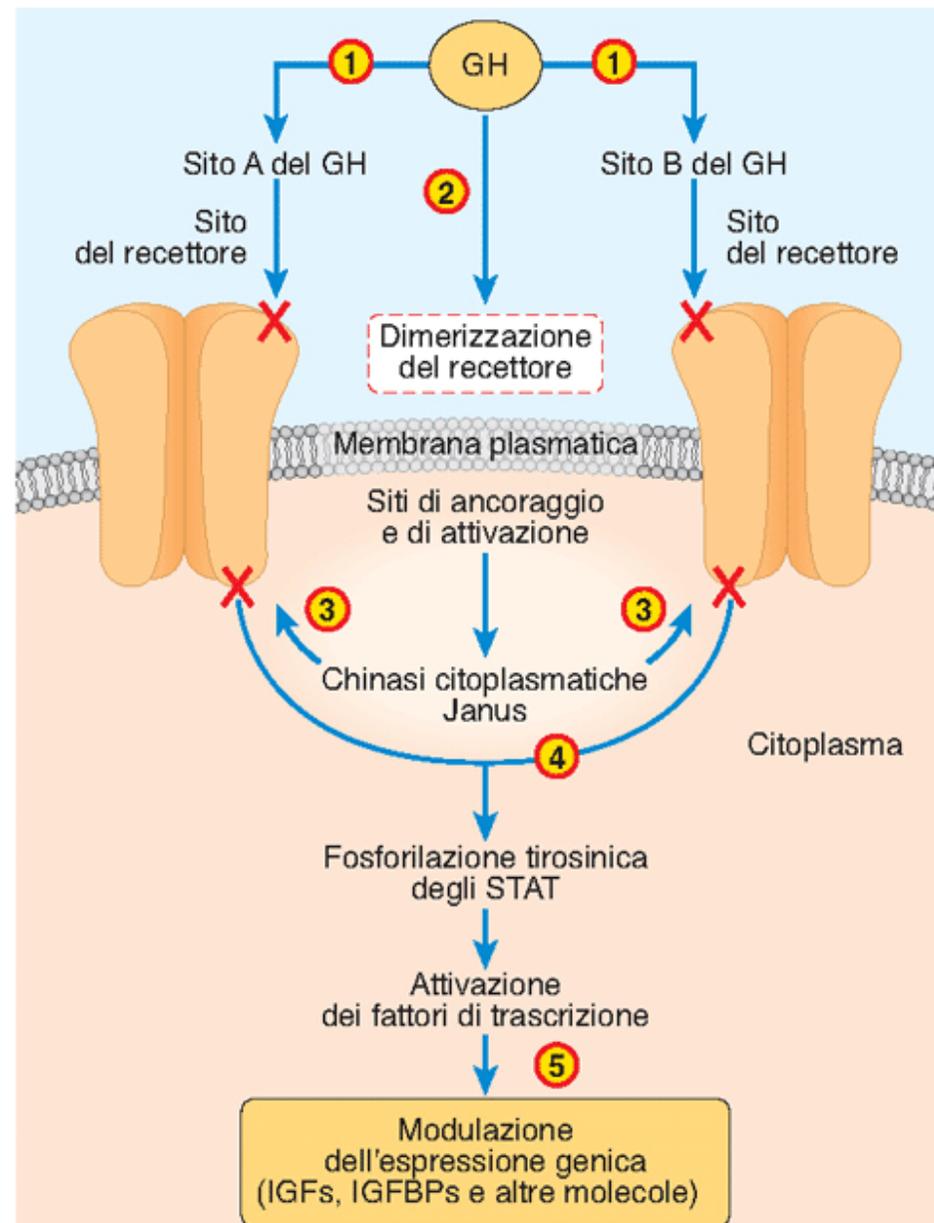
Fattore rilasciante la prolattina (PRF) --> Stimola la secrezione di prolattina

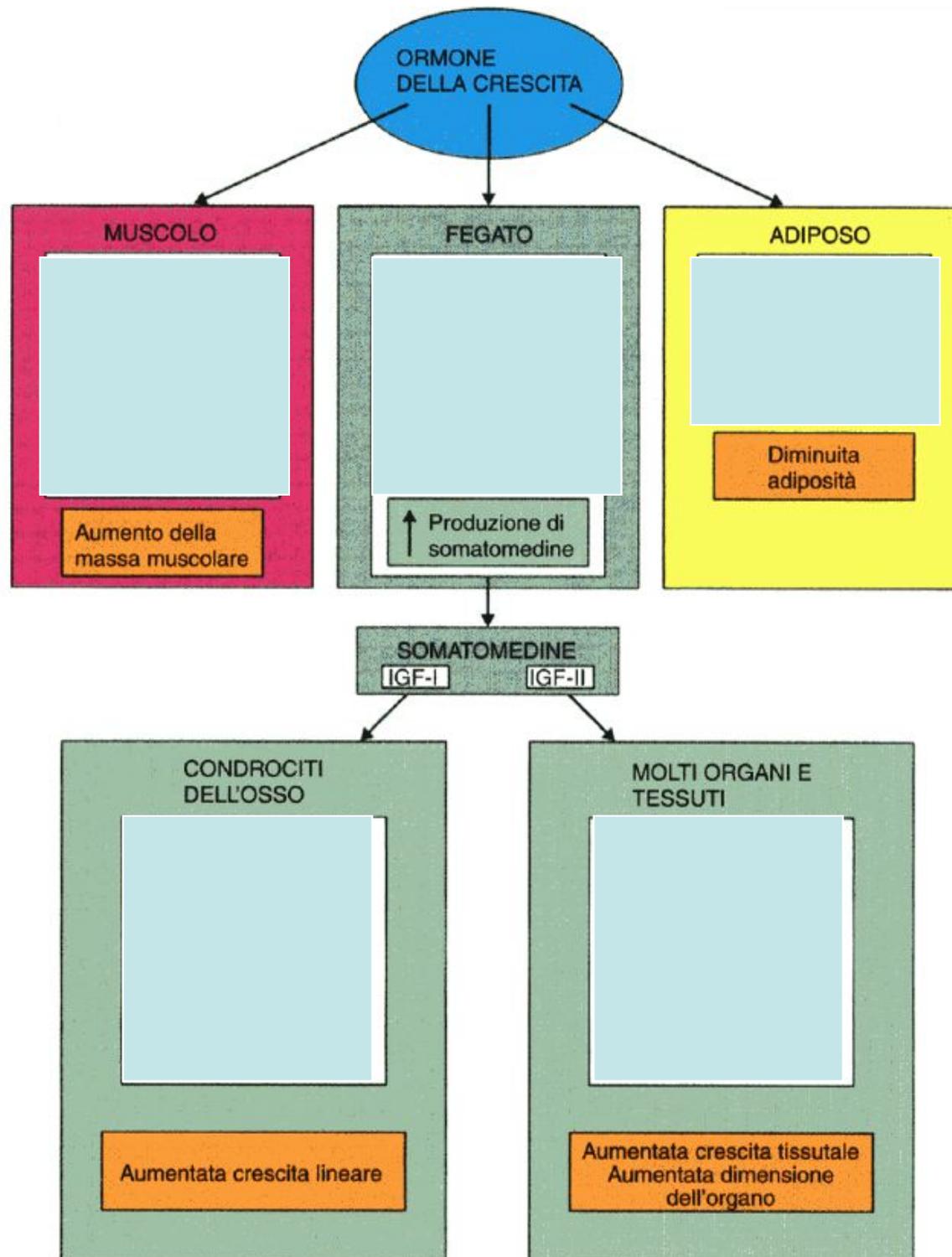


21.7 I neuroormoni ipofisiotropi e gli assi endocrini.

ADENOIPOFISI: GH

Peptide





GH
Effetti

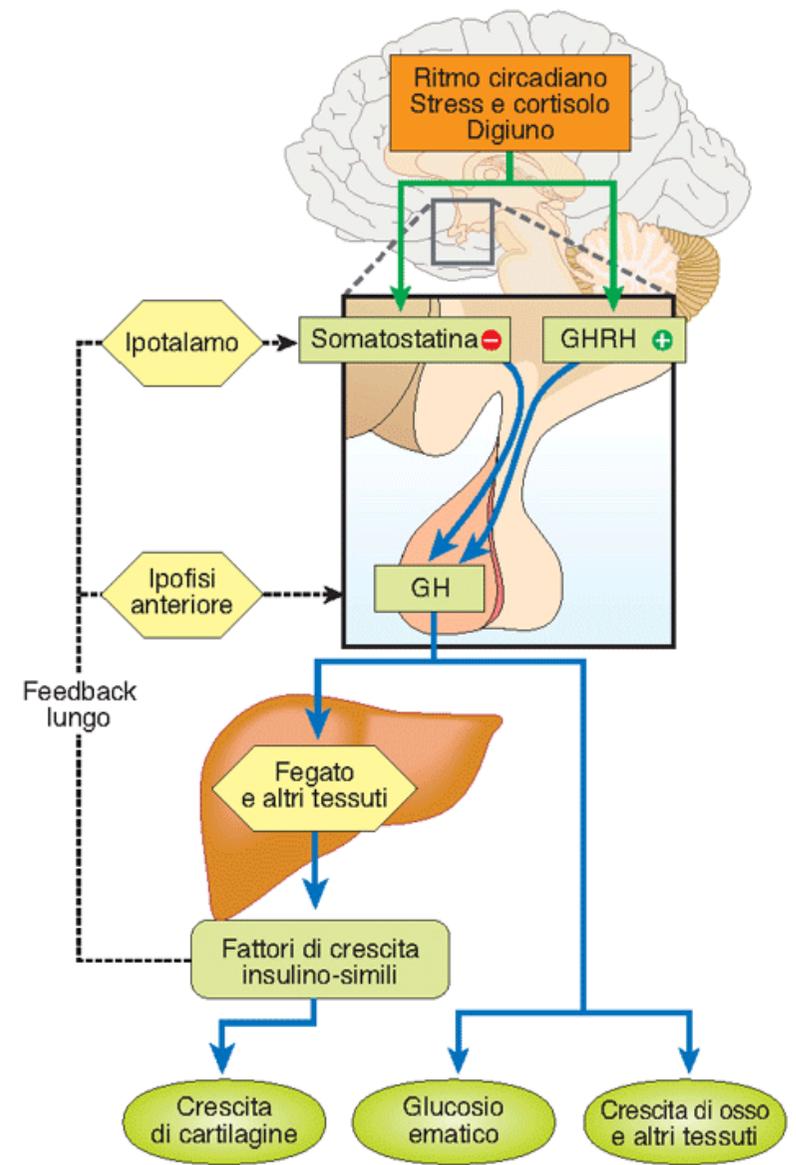
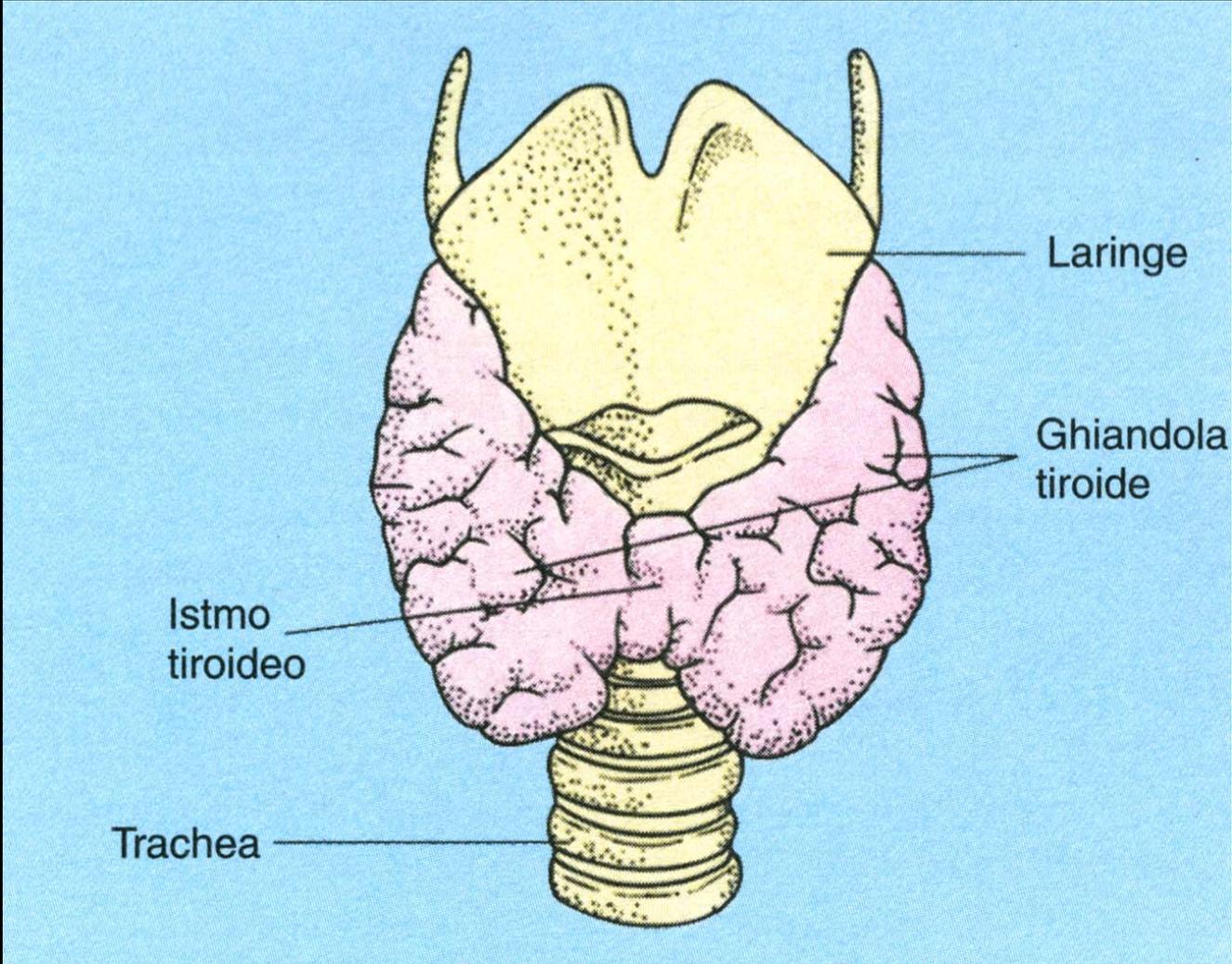
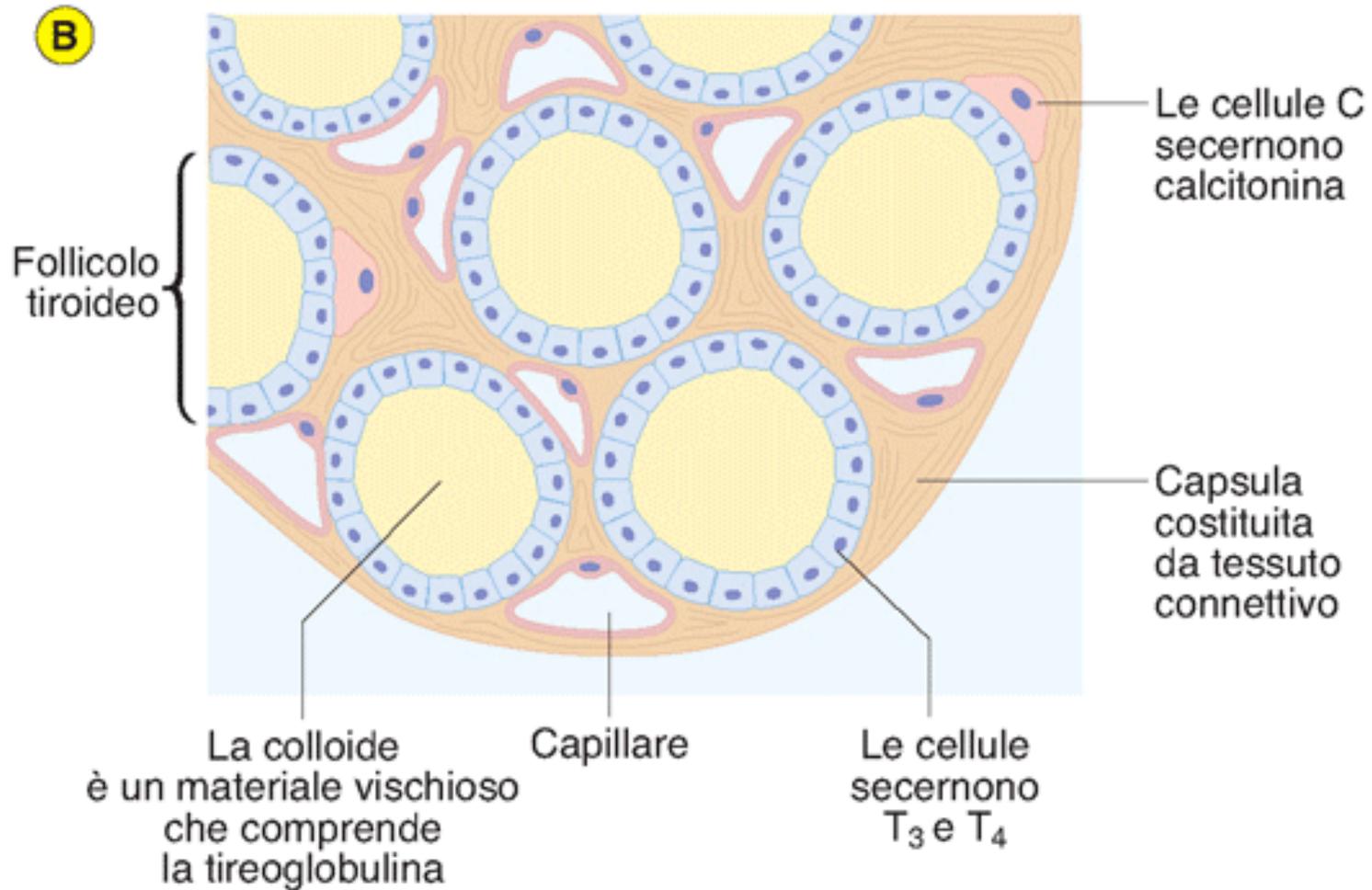


Figura 21.11 Il sistema di controllo dell'ormone della crescita. Il segno + indica stimolazione; il segno - indica inibizione.

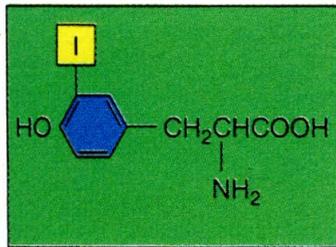
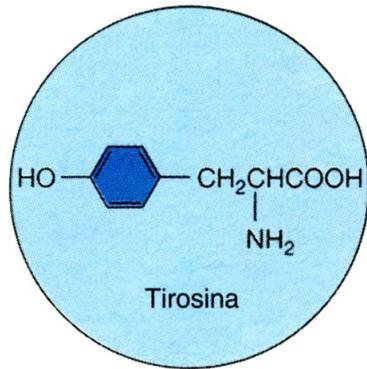




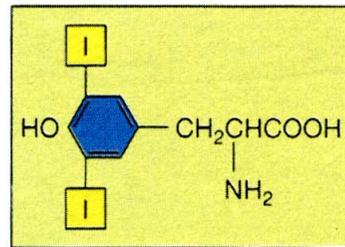
I follicoli



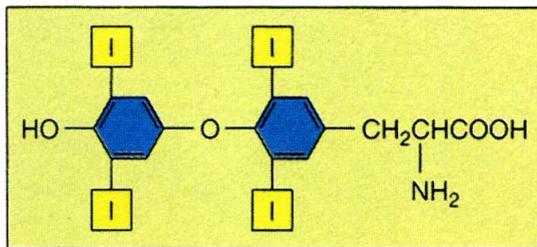
ORMONI TIROIDEI



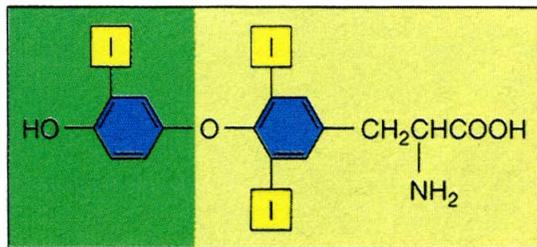
Monoiodotirosina (MIT)



Diiodotirosina (DIT)

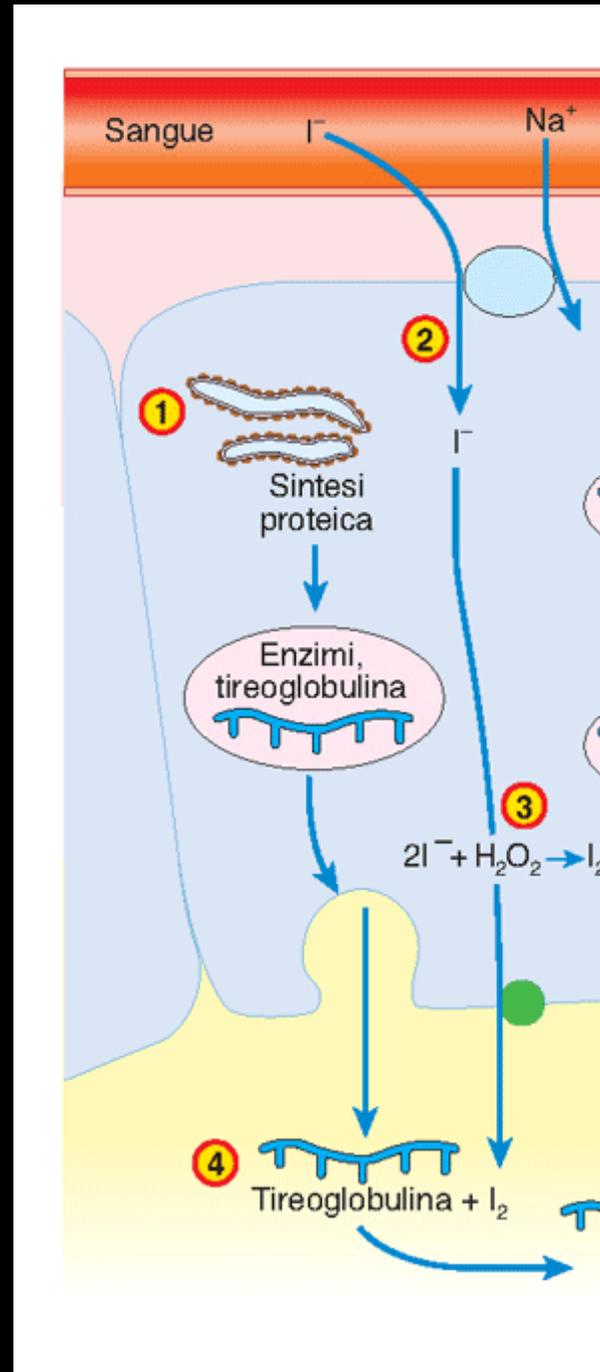


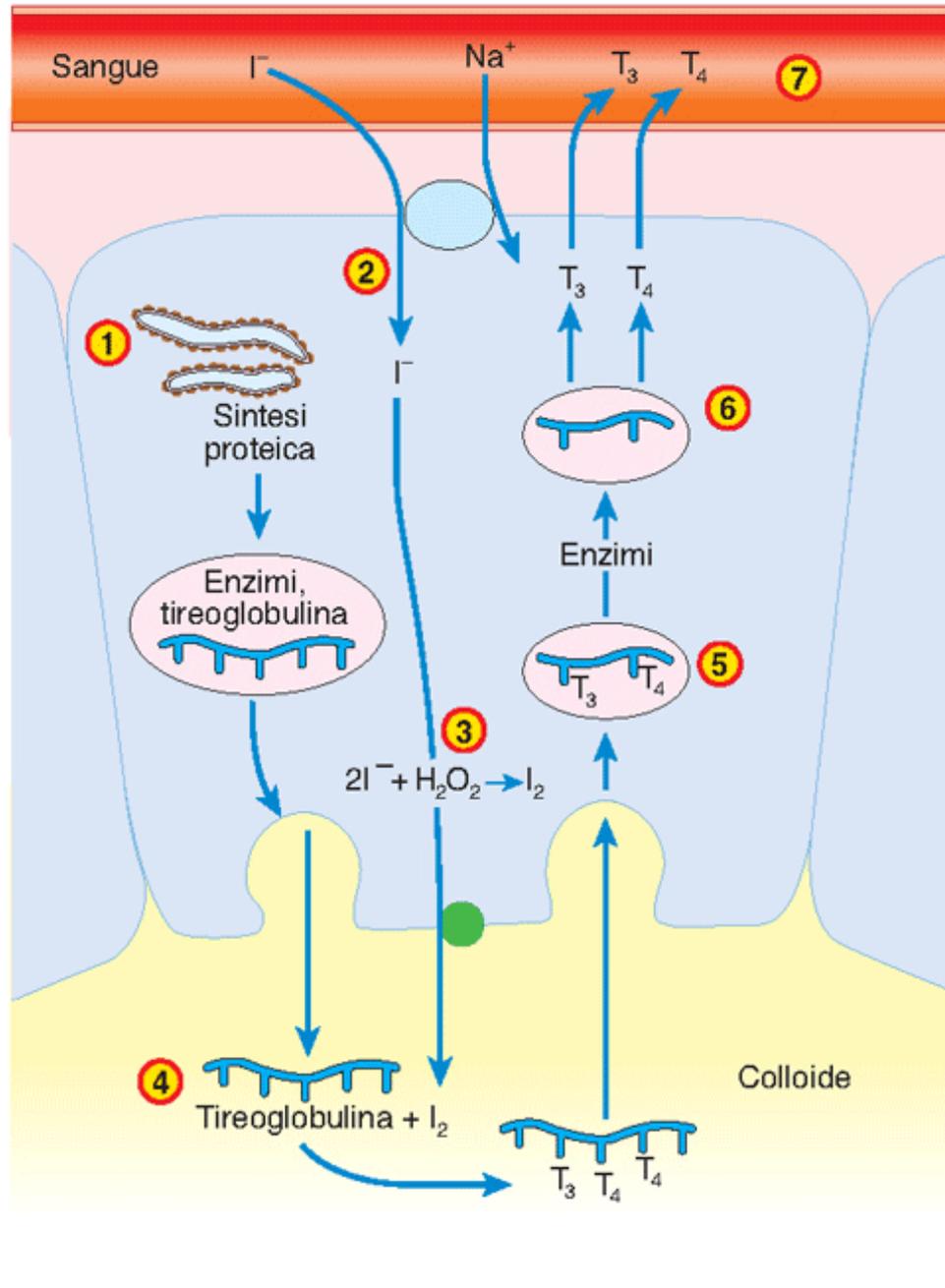
T₄ (tiroxina)



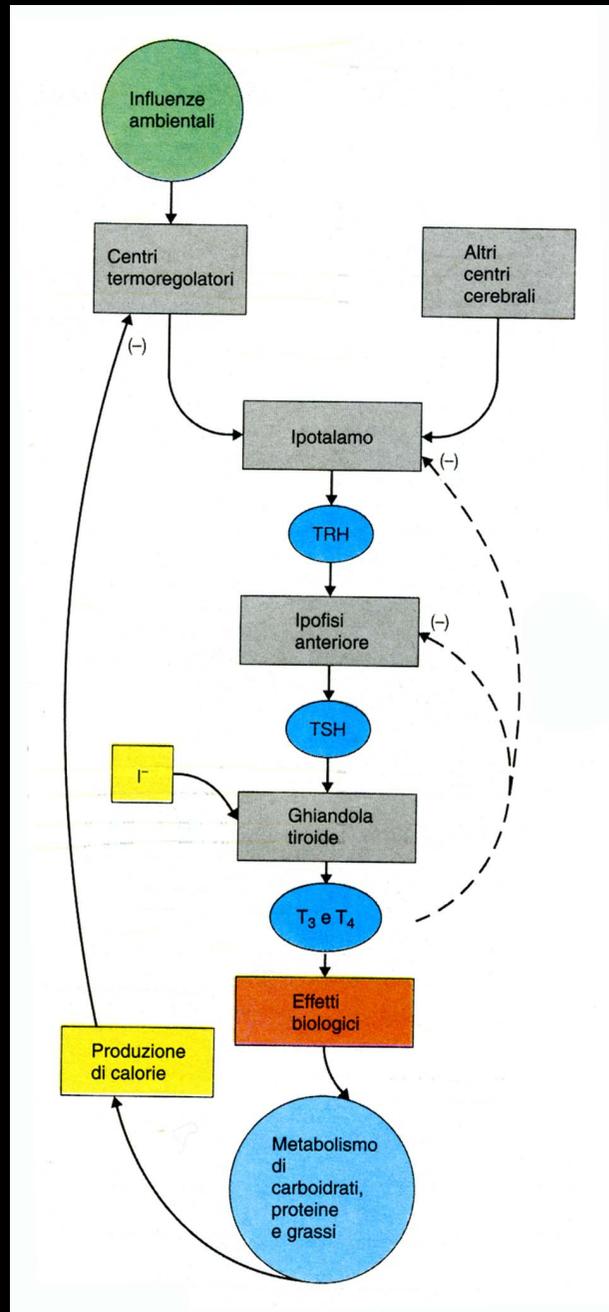
T₃

BIOSINTESI DEGLI ORMONI TIROIDEI



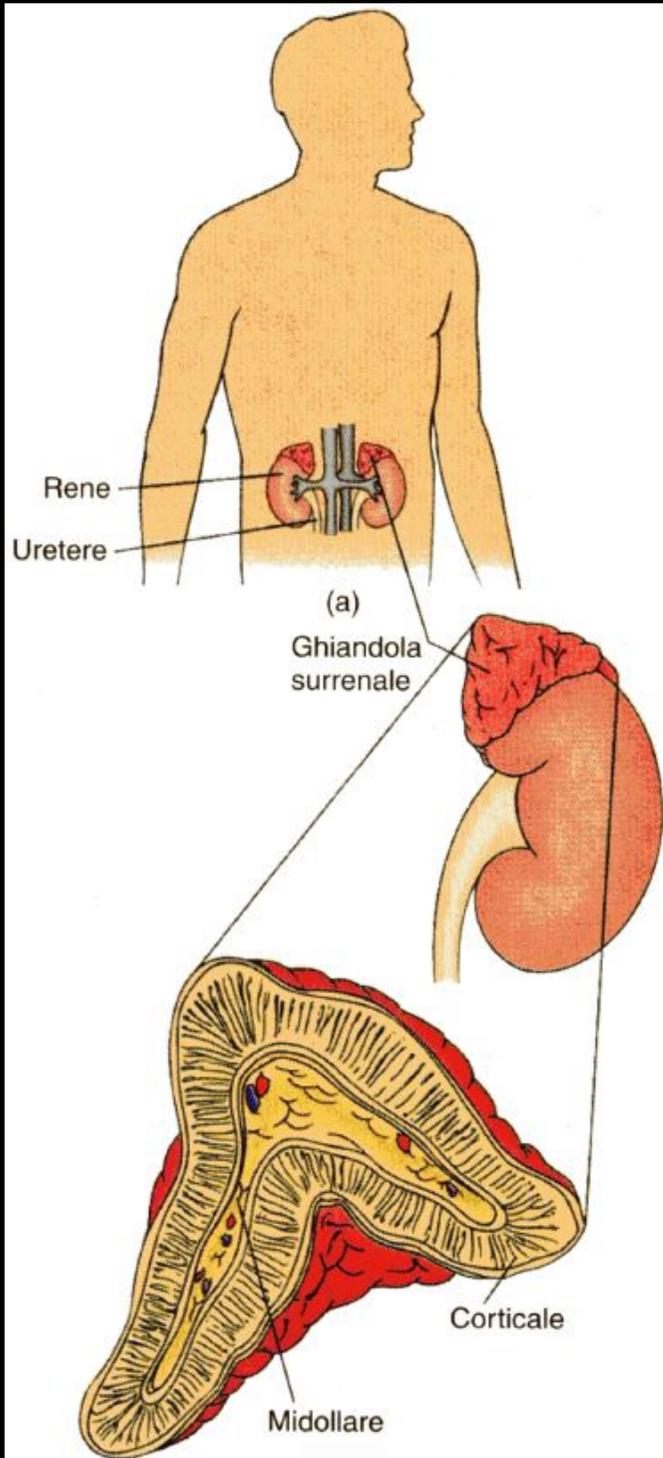


ORMONI TIROIDEI (T2-T3-T4): REGOLAZIONE DI SINTESI E SECREZIONE

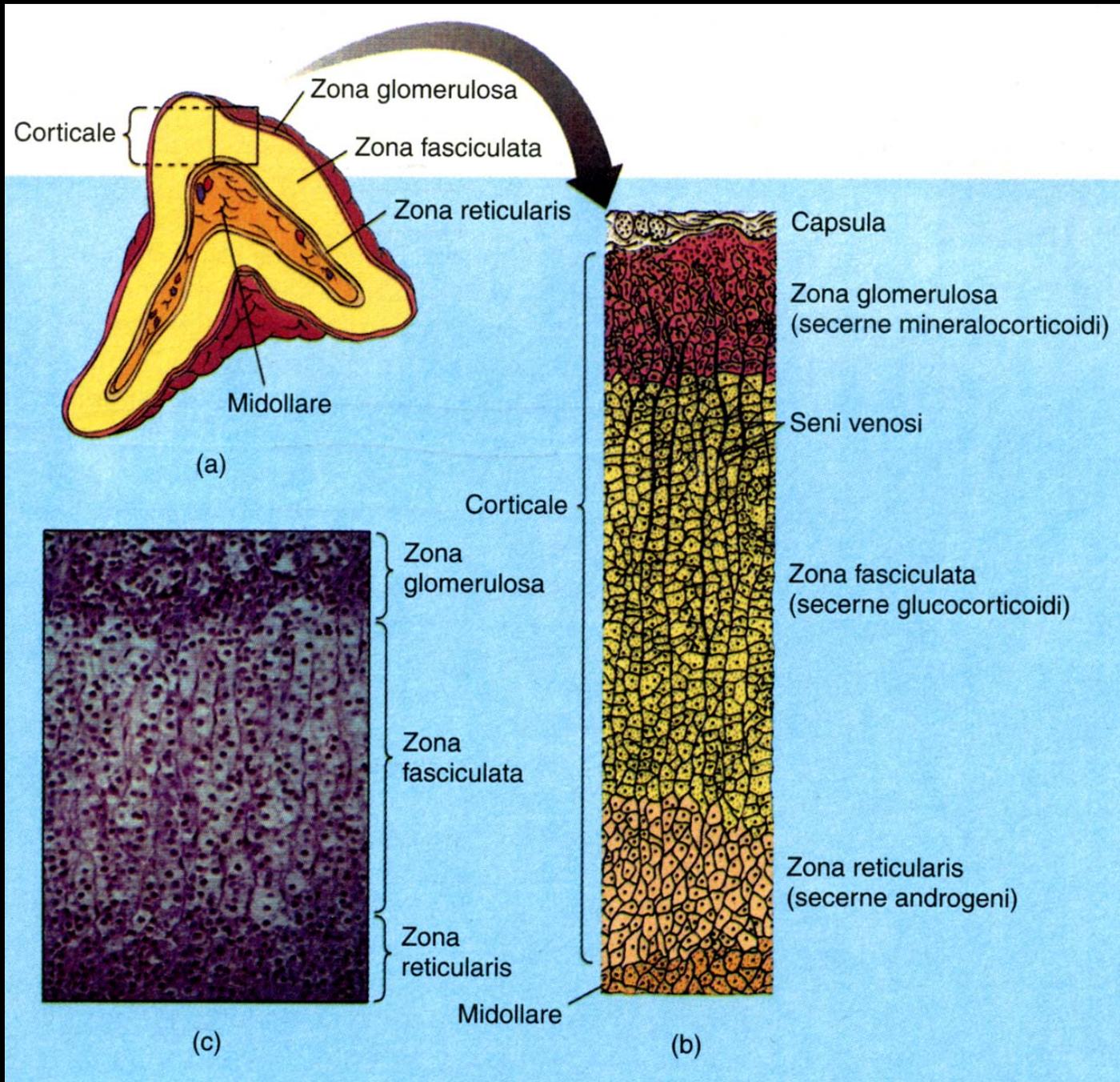


ORMONI SURRENALICI

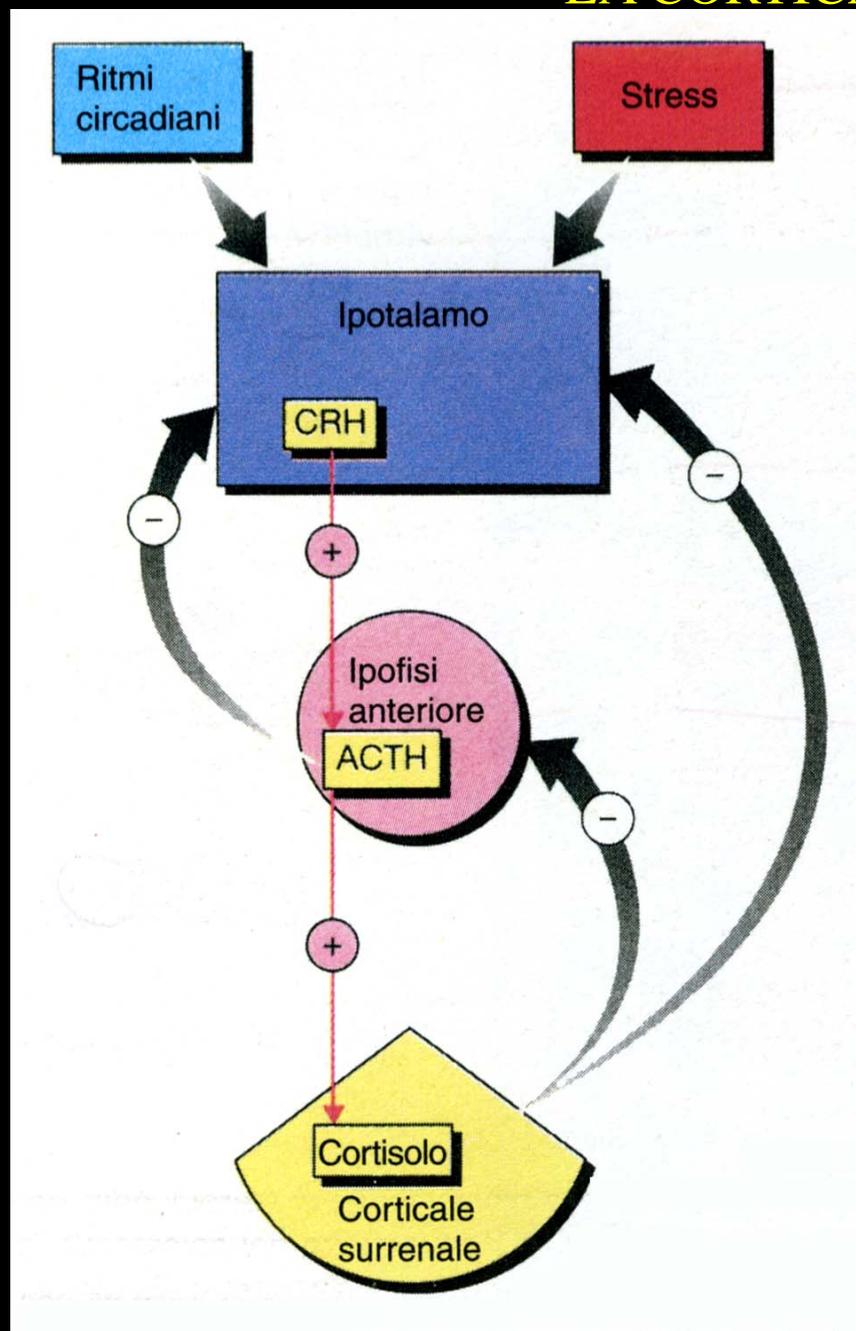
GHIANDOLE SURRENALI: due tessuti endocrini (corticale e midollare)

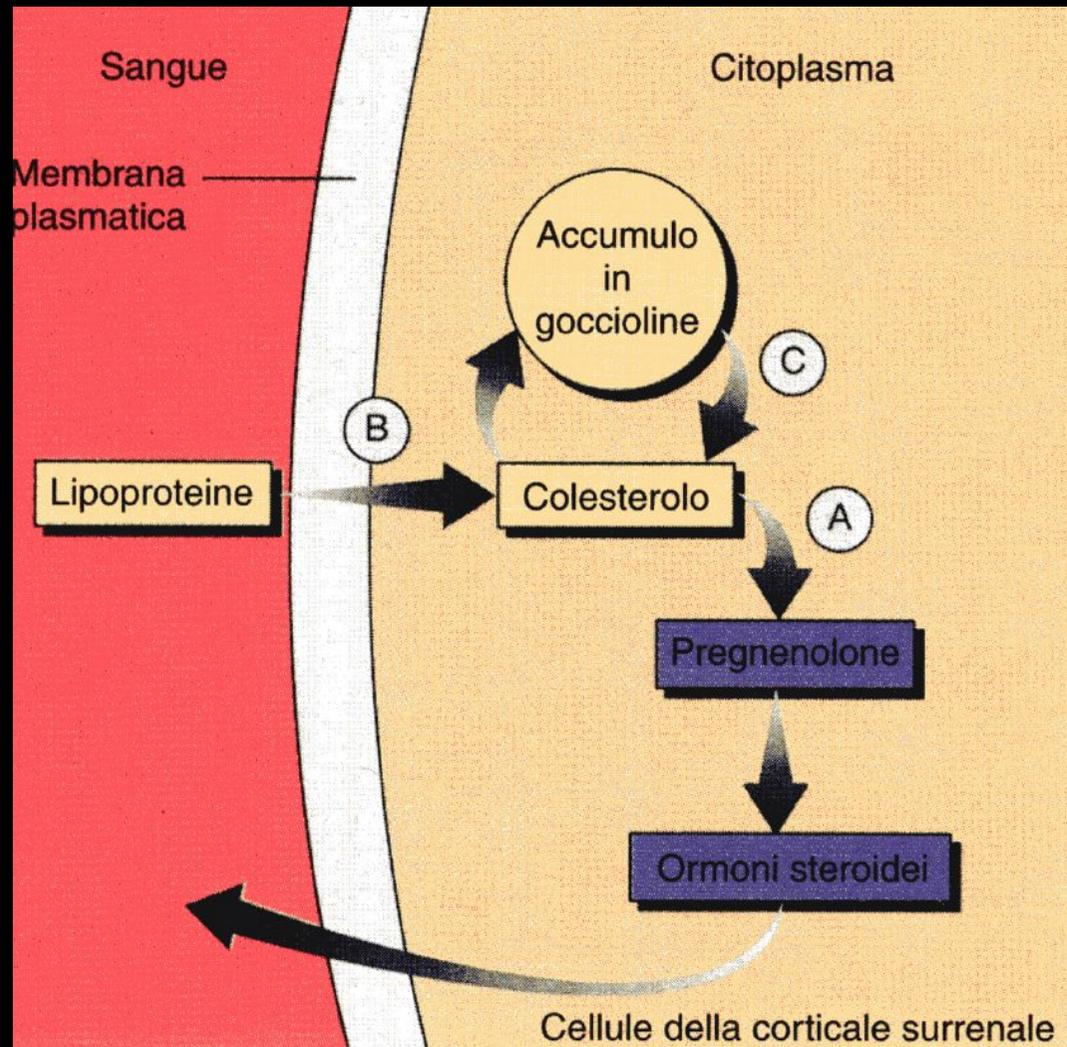
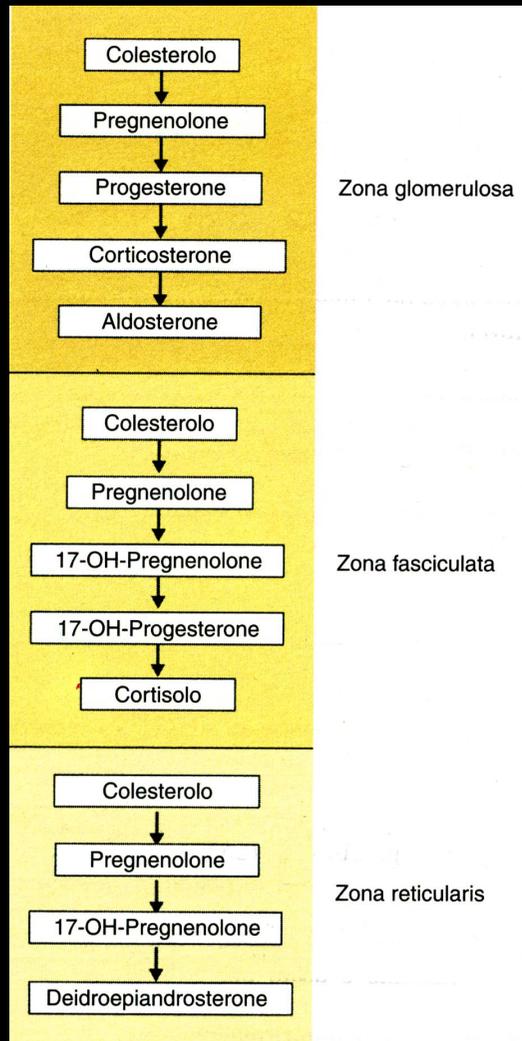


LA CORTICALE SURRENALE



LA CORTICALE SURRENALE





I GLUCOCORTICOIDI

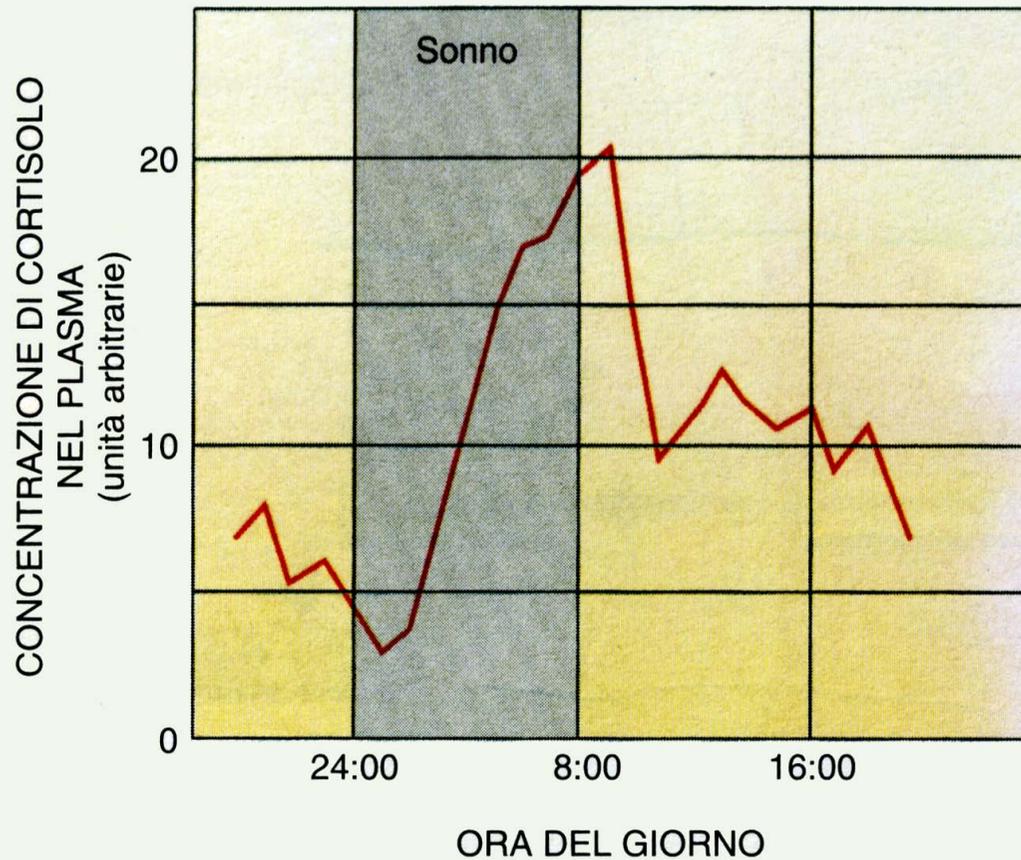


Tabella 14-1

Tipi di stress che influenzano la secrezione di cortisolo

Stress fisici

× Ipoglicemia

Traumi

Frattura di ossa

Ustioni

Operazioni chirurgiche

× Esposizioni al freddo

Infezioni

Esercizio pesante

Stress psicologici

Ansia acuta

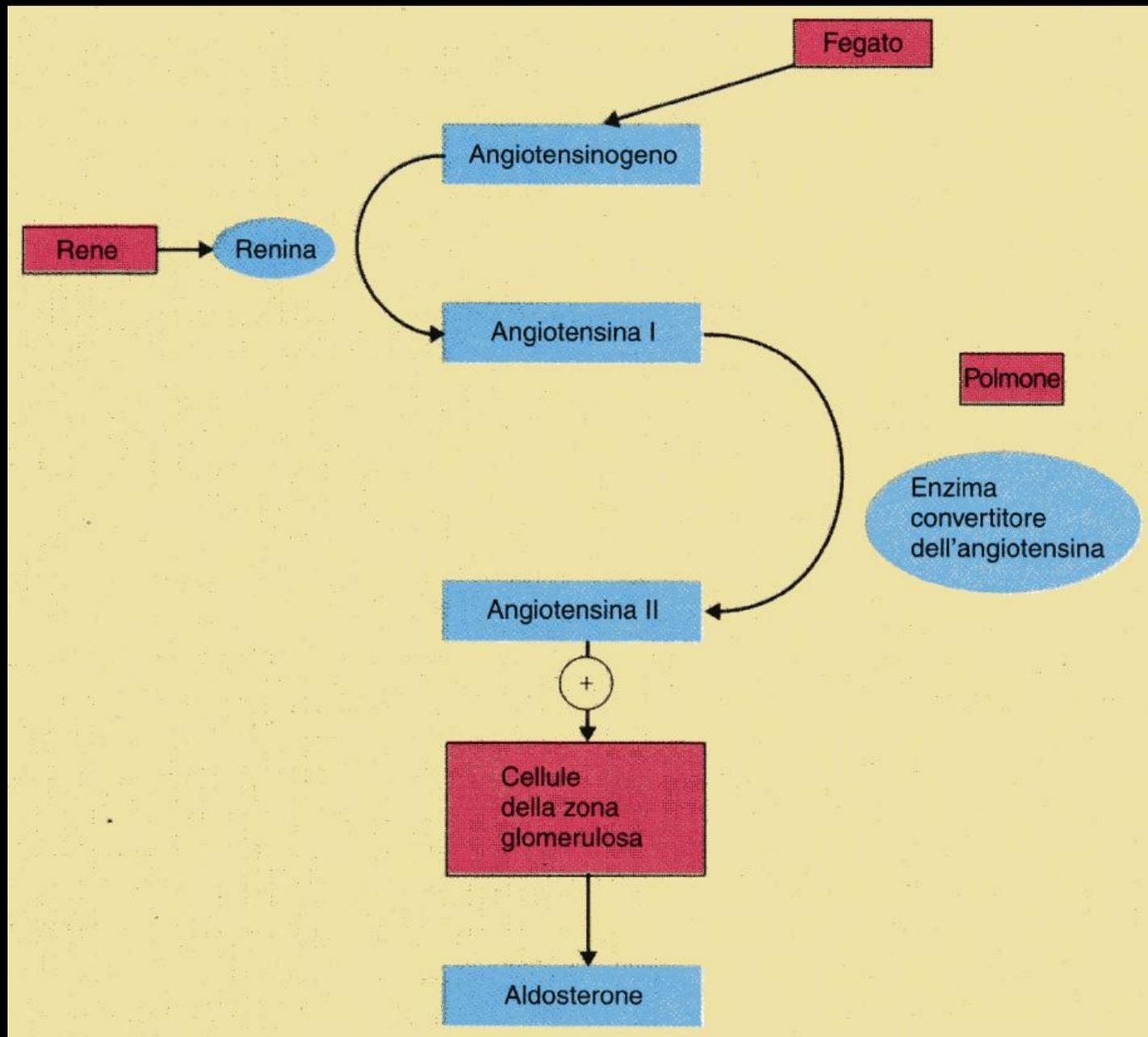
Anticipazione di situazioni pesanti; per es.

operazioni chirurgiche, esami universitari, o

→ voli aerei

Situazioni nuove

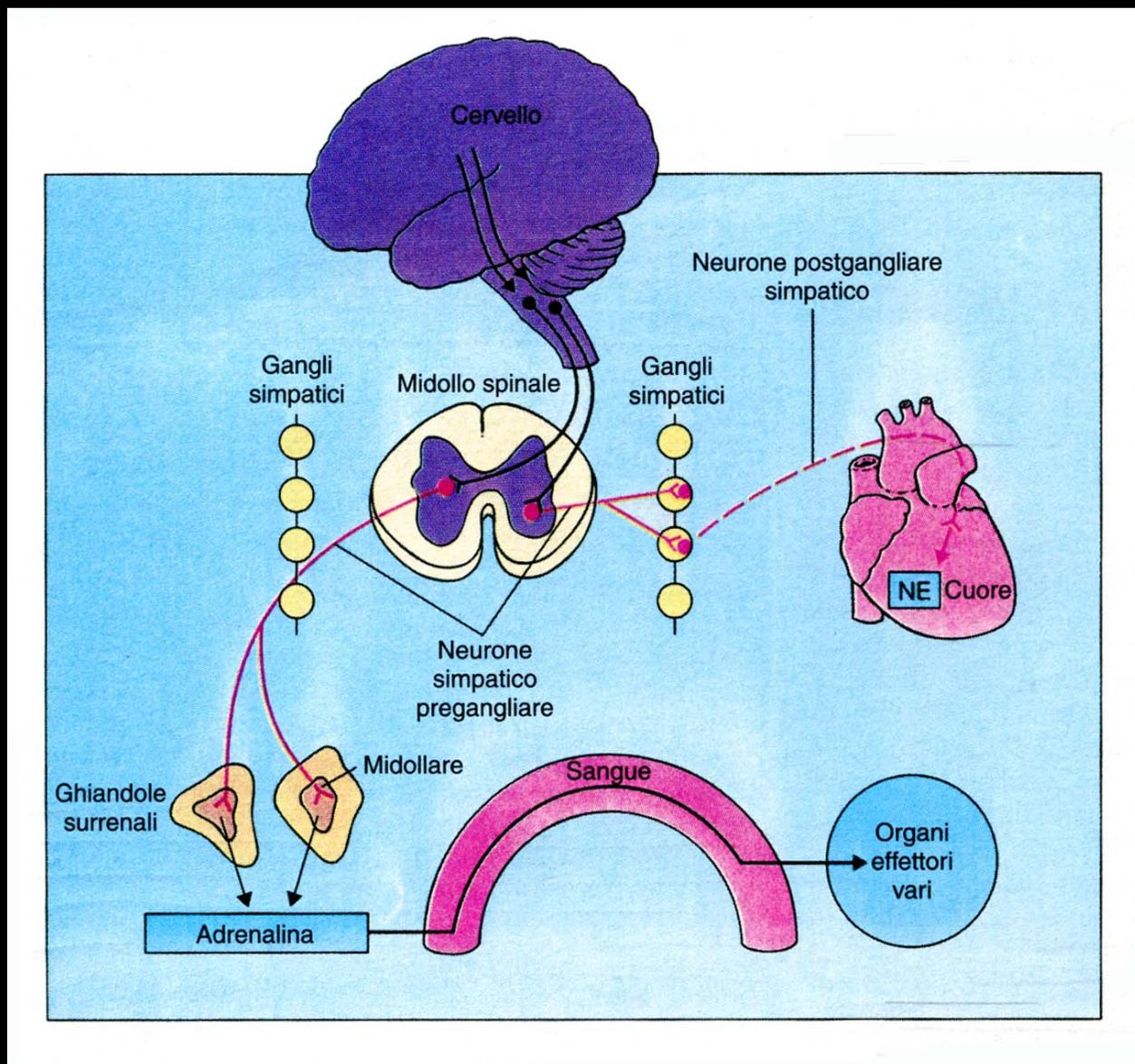
Ansia cronica



LA MIDOLLARE SURRENALE

Secerne catecolamine (Adrenalina, e poca Noradrenalina)

Sistema simpaticosurrenale



LA MIDOLLARE SURRENALE

Azioni dell'adrenalina: attacco o fuga

Tabella 14-4

Riassunto delle azioni dell'adrenalina

Effetti sul sistema cardiovascolare

Aumentata gittata cardiaca

Aumentato ritmo cardiaco

Aumentata forza delle contrazioni cardiache

Vasodilatazione nel muscolo scheletrico

Vasocostrizione negli organi interni e nella pelle

Effetti negli altri tessuti

Rilassamento dei muscoli lisci nel tratto
gastrointestinale, nella vescica urinaria,
nelle vie aeree dei polmoni

Aumentata vigilanza mentale

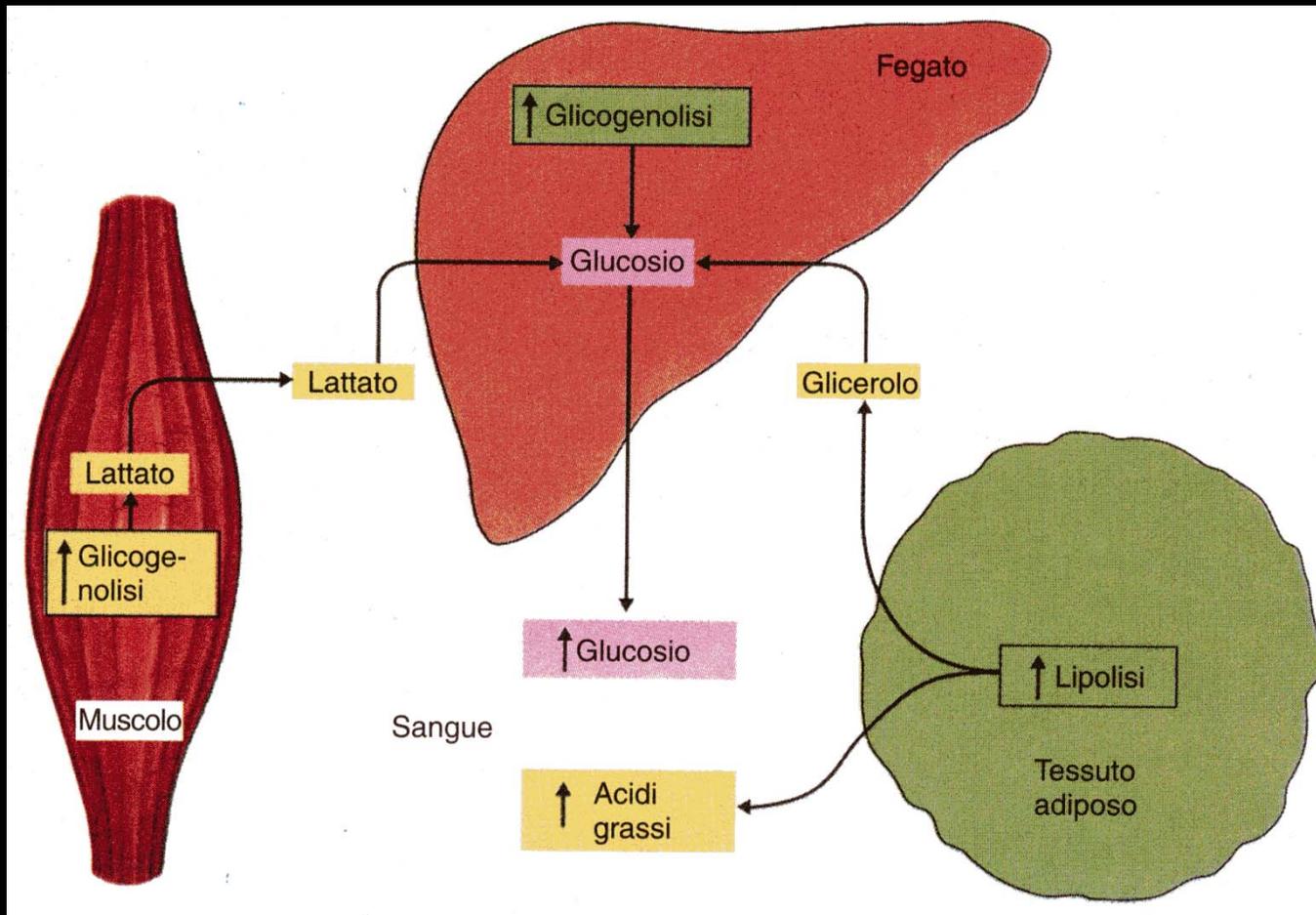
Effetti sul metabolismo

Aumentata glicogenolisi nel fegato e nel muscolo

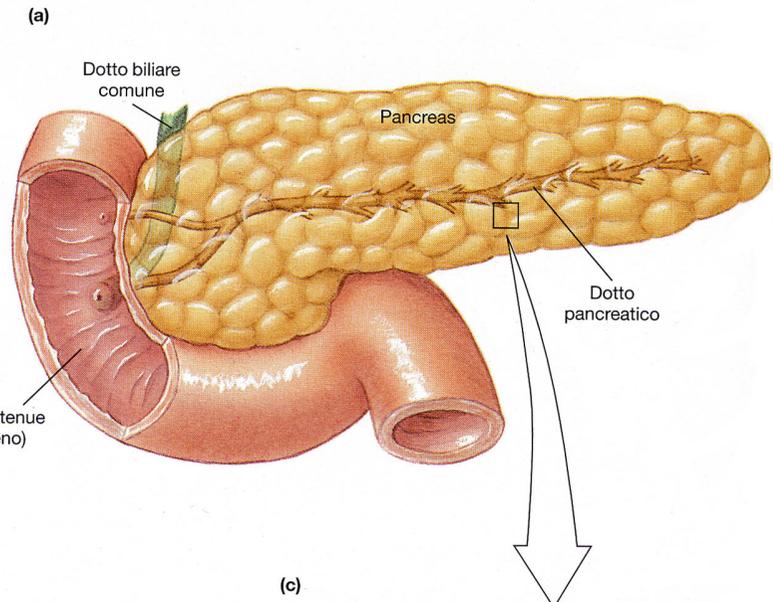
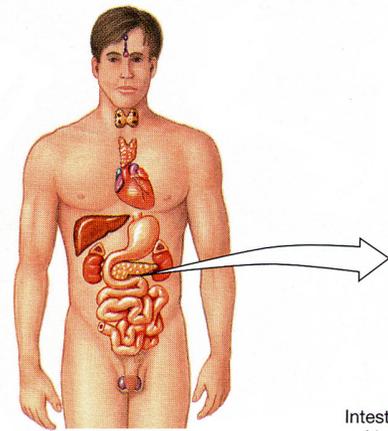
Aumentata lipolisi nel tessuto adiposo

Diminuita secrezione di insulina

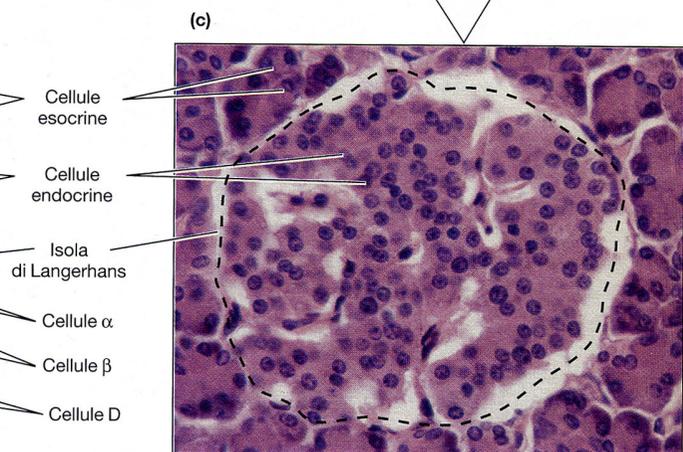
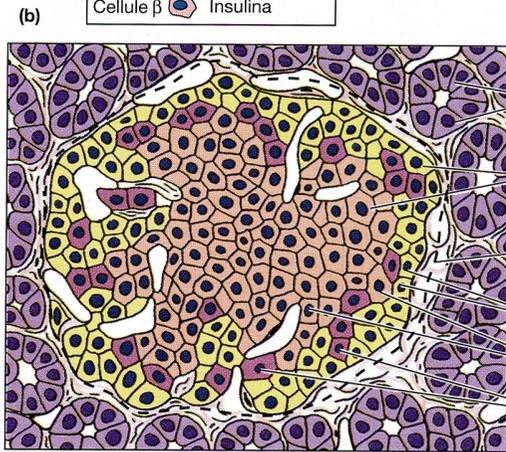
Aumentata secrezione di glucagone



IL PANCREAS



CELLULA	SECRETO:
Cellule α	Glucagone
Cellule D	Somatostatina
Cellule β	Insulina



How Target Cells Respond to Insulin

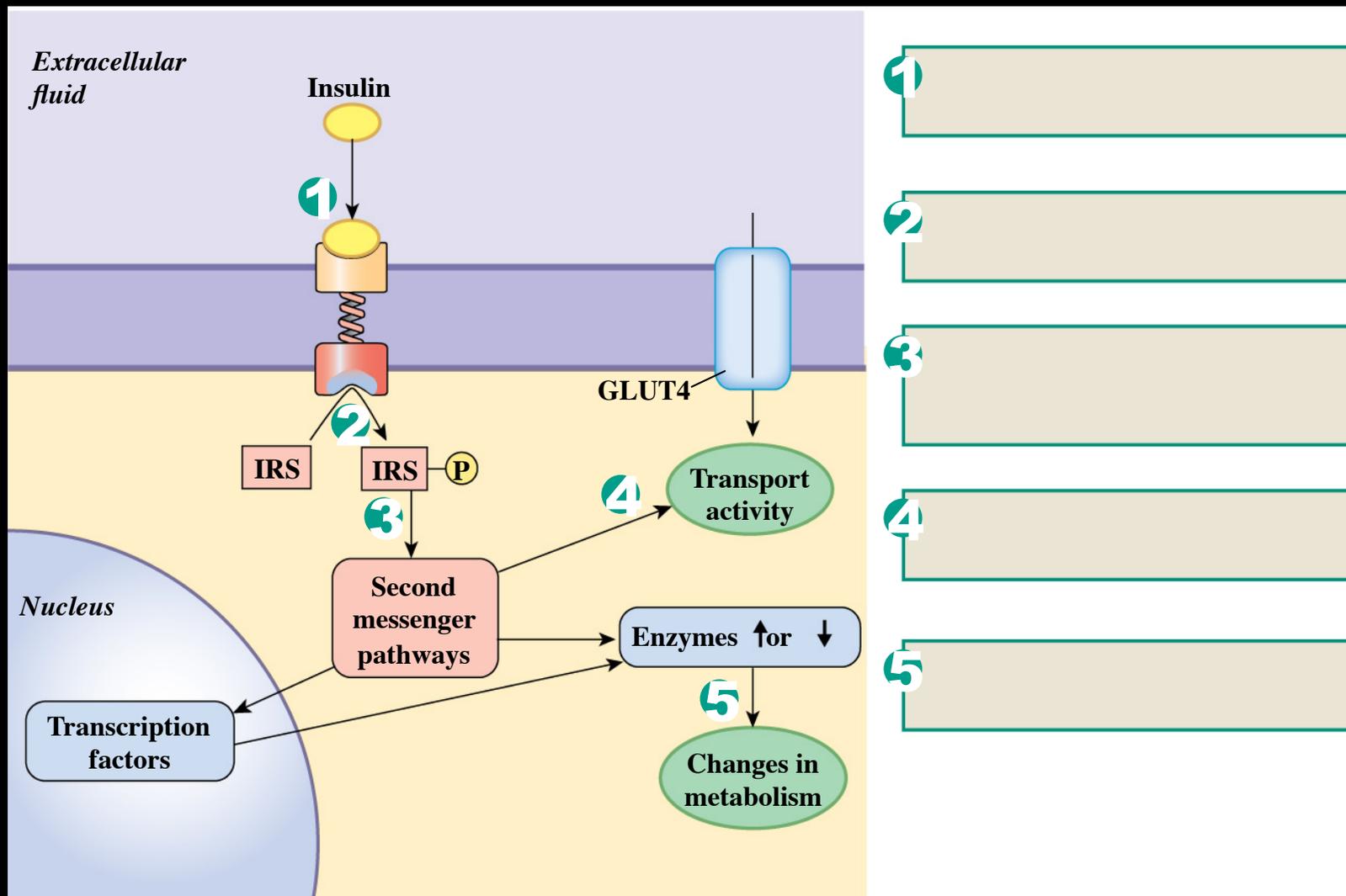
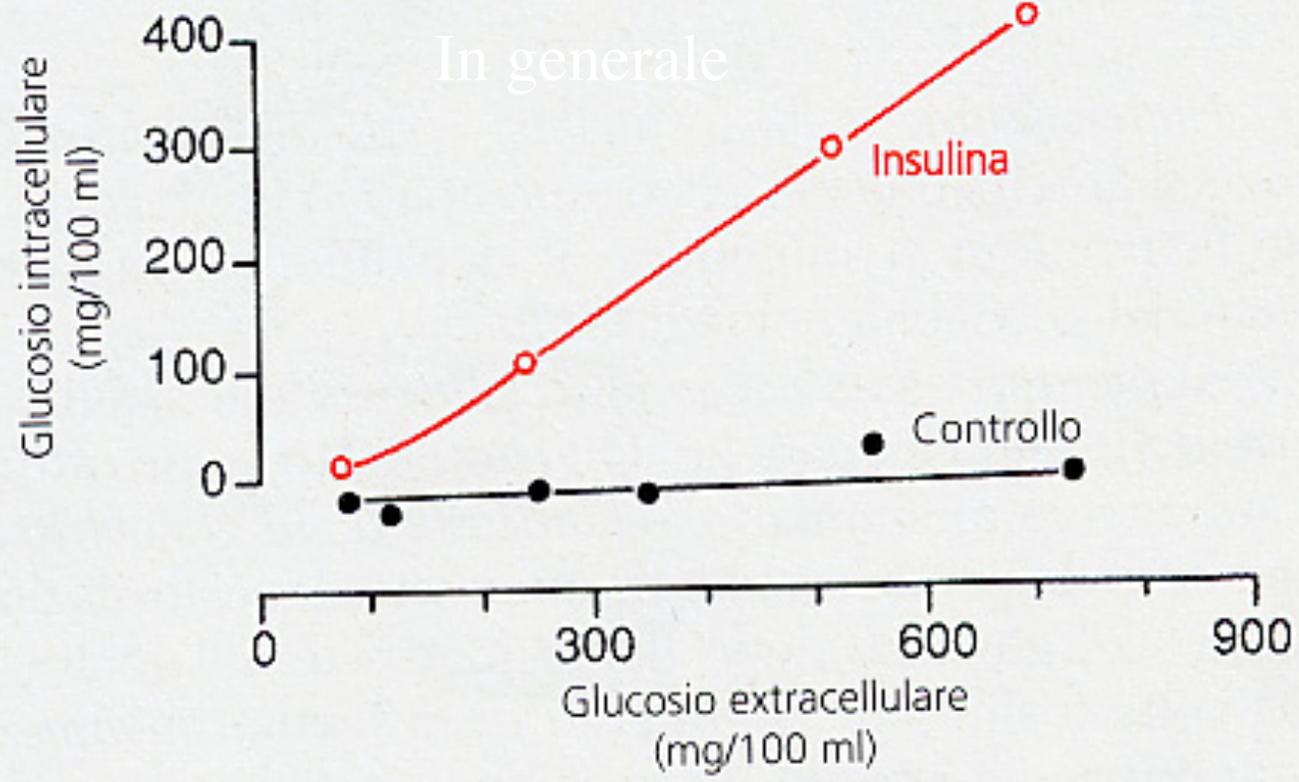
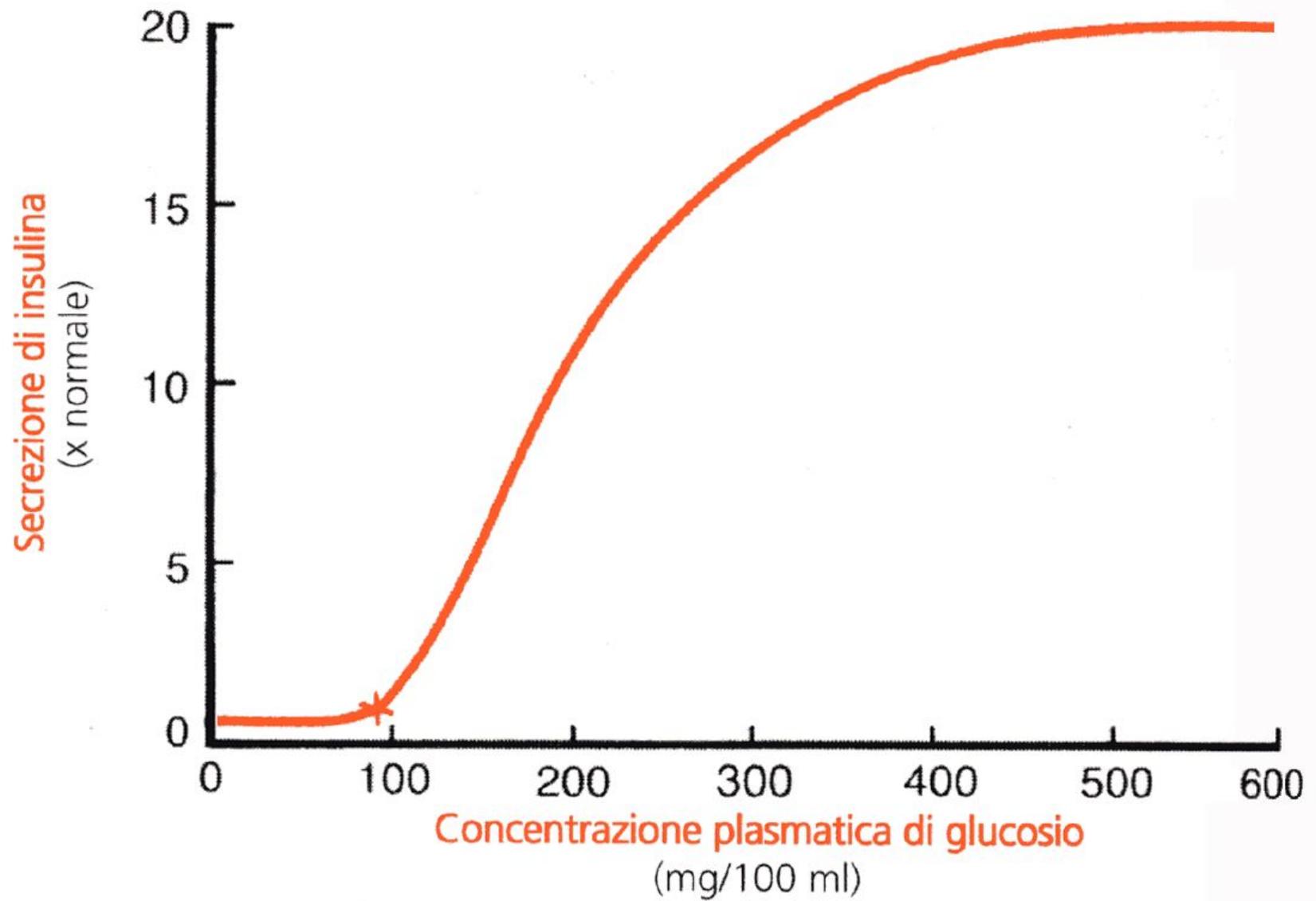
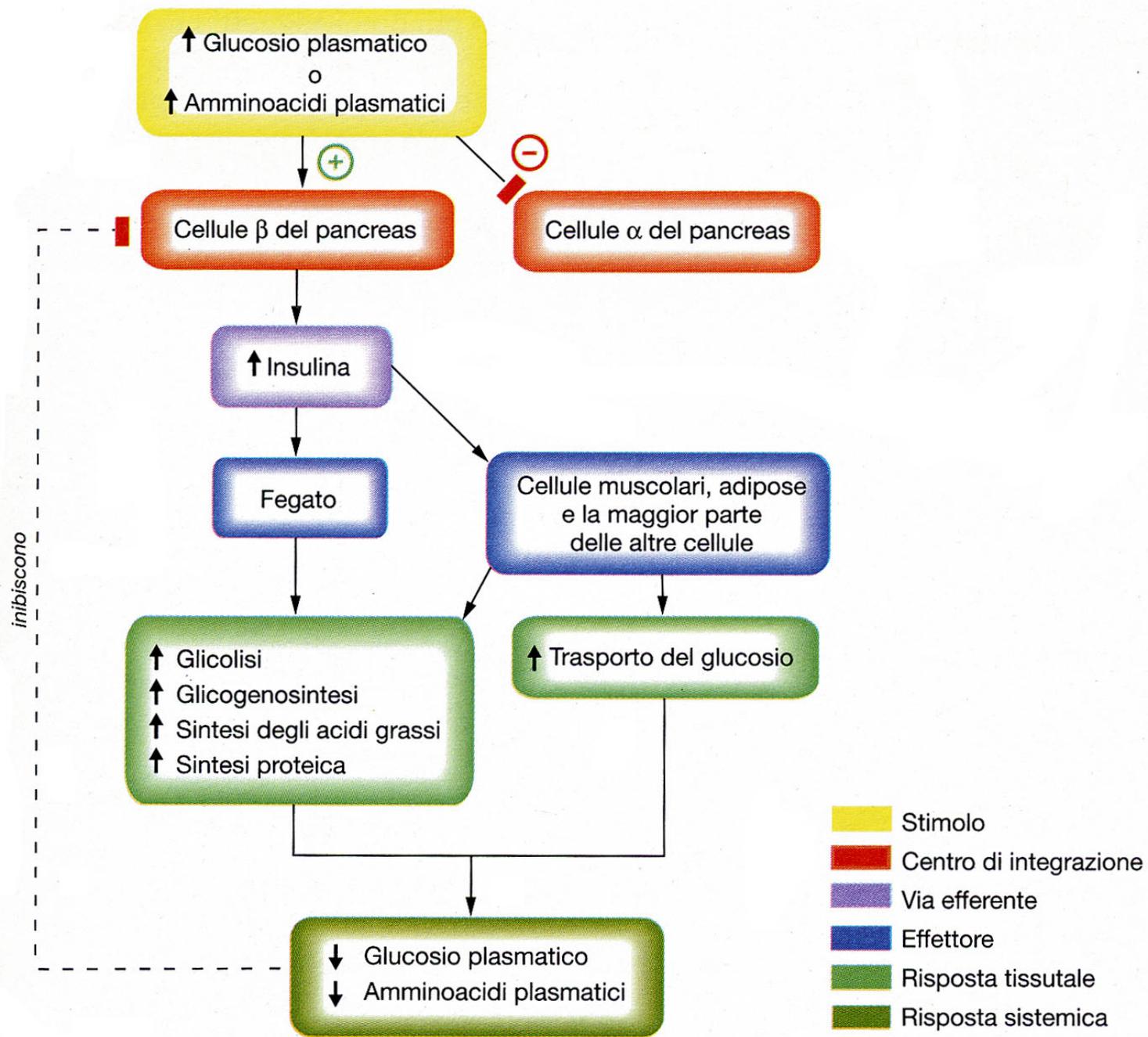


Figure 22-11, steps 1–5

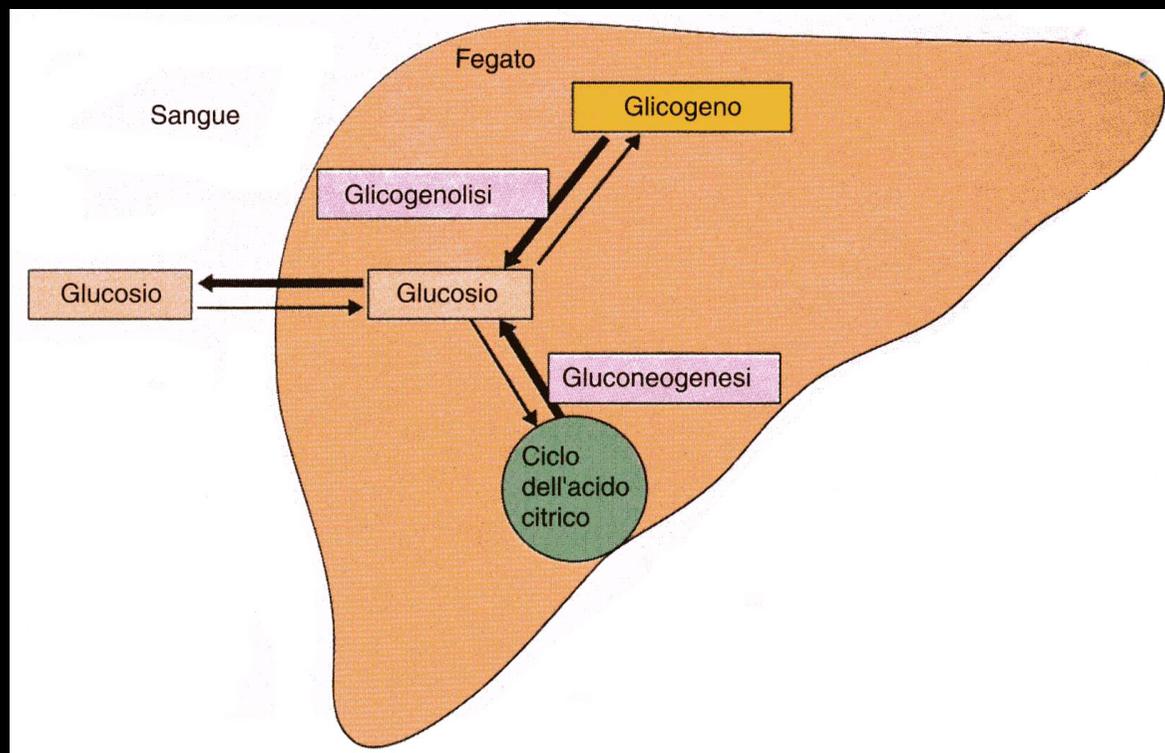


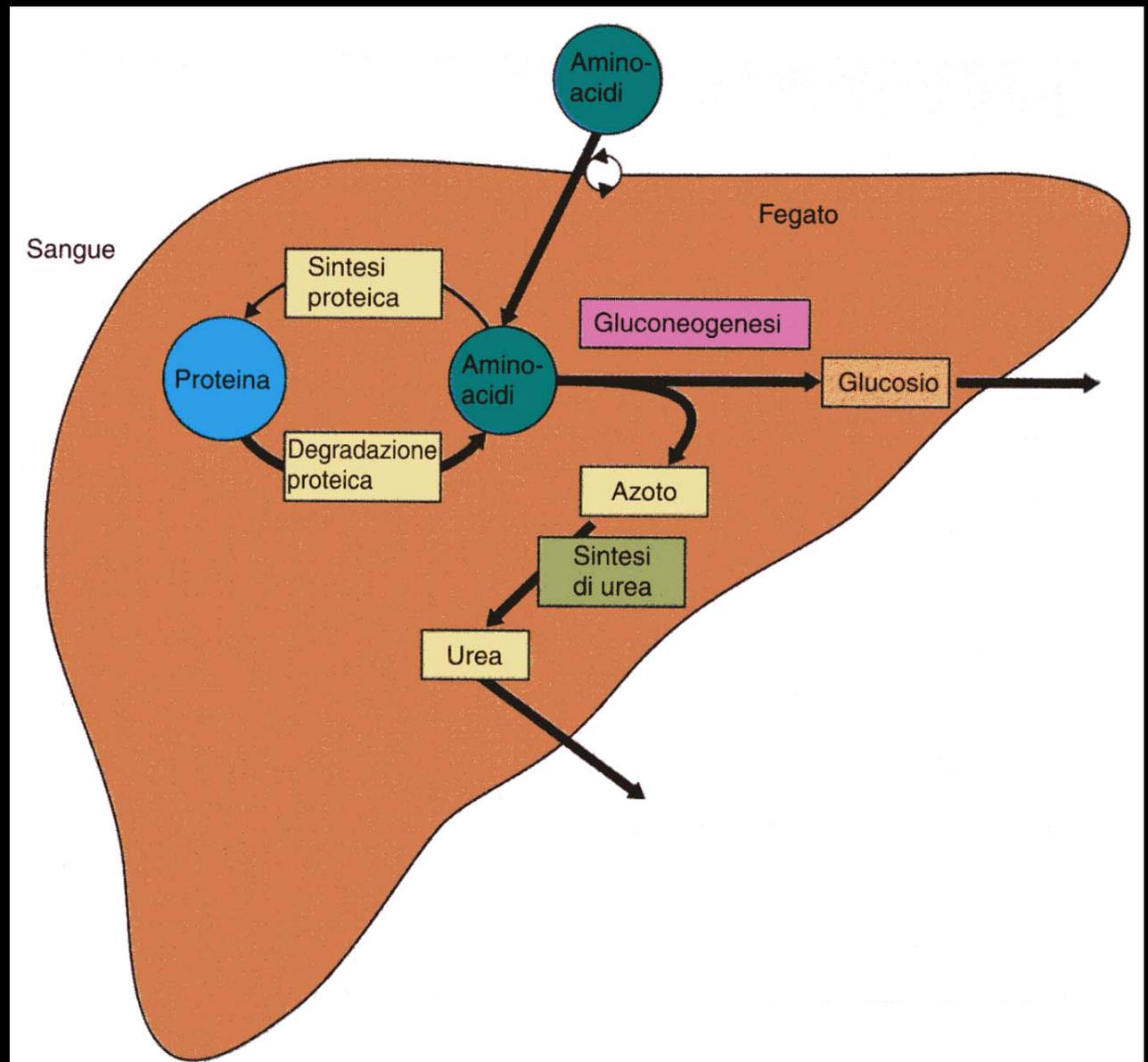
Fattore più importante: aumento della glicemia





inibiscono





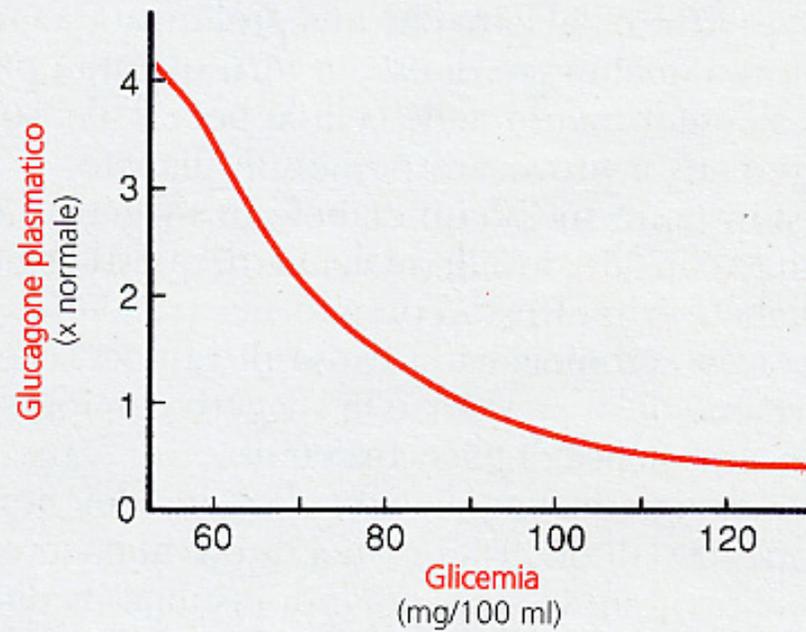
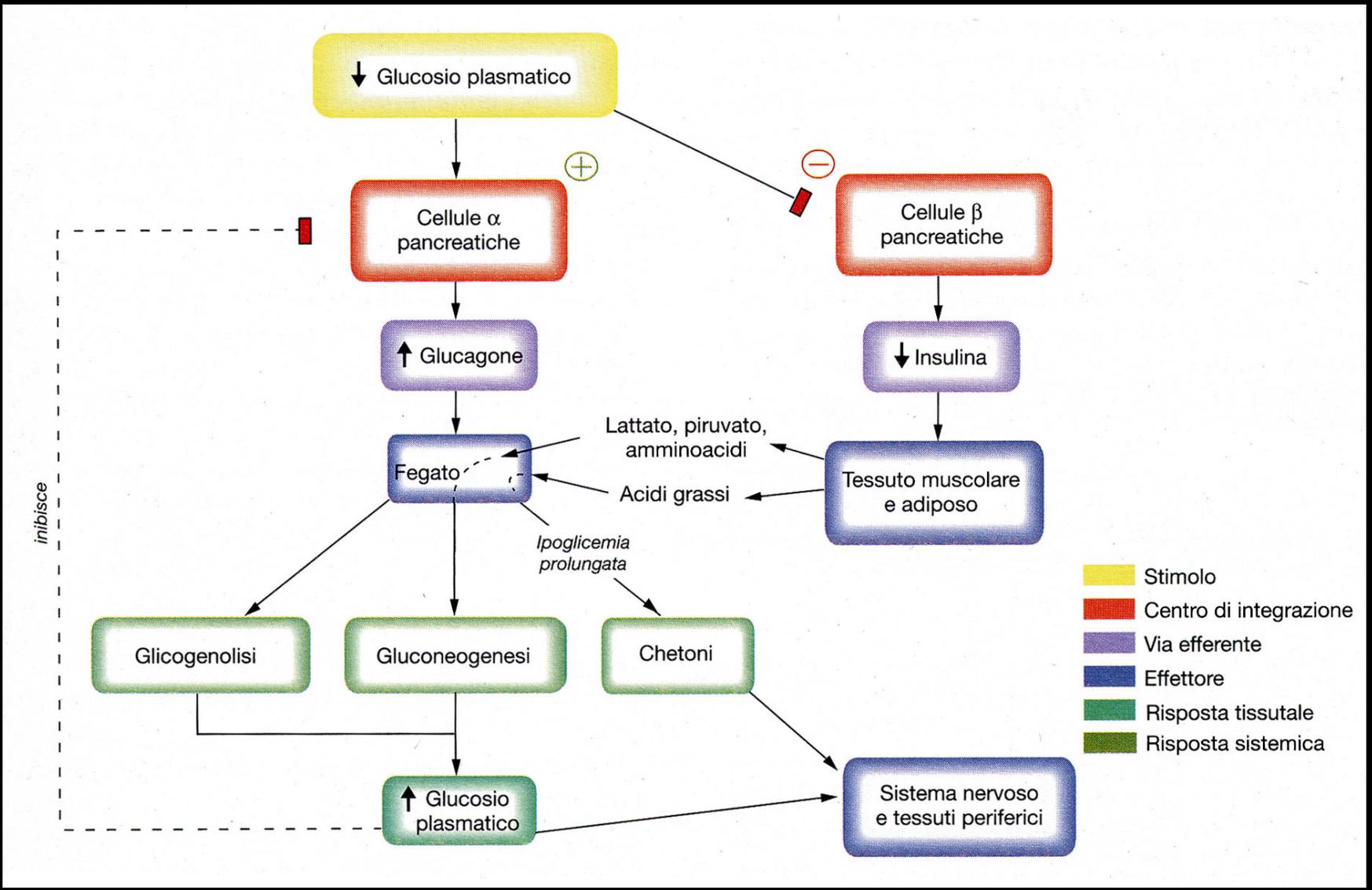
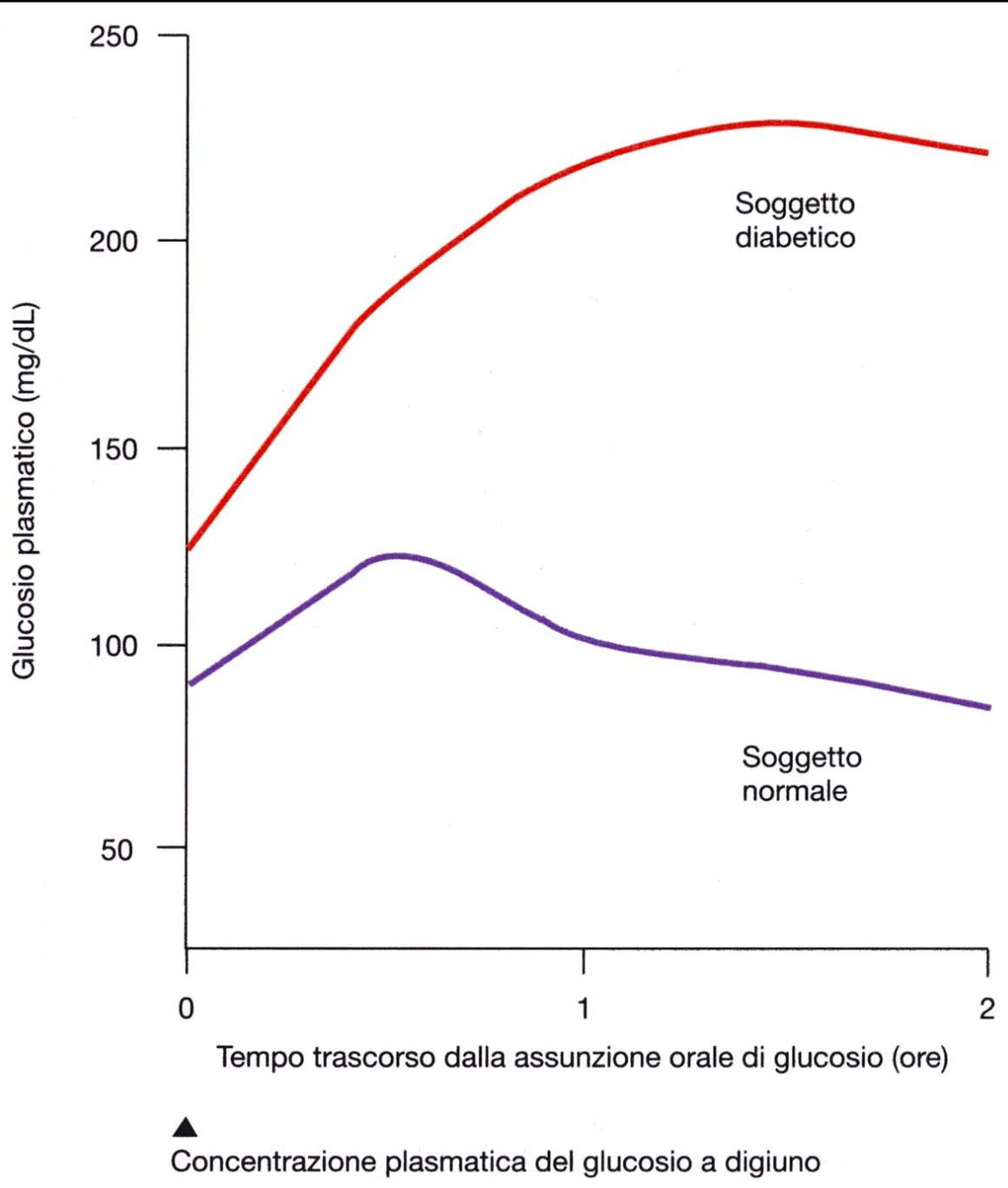


Figura 78-8. Concentrazione plasmatica di glucagone a differenti livelli glicemici.





ORMONI PARATIROIDEI: PARATORMONE

