

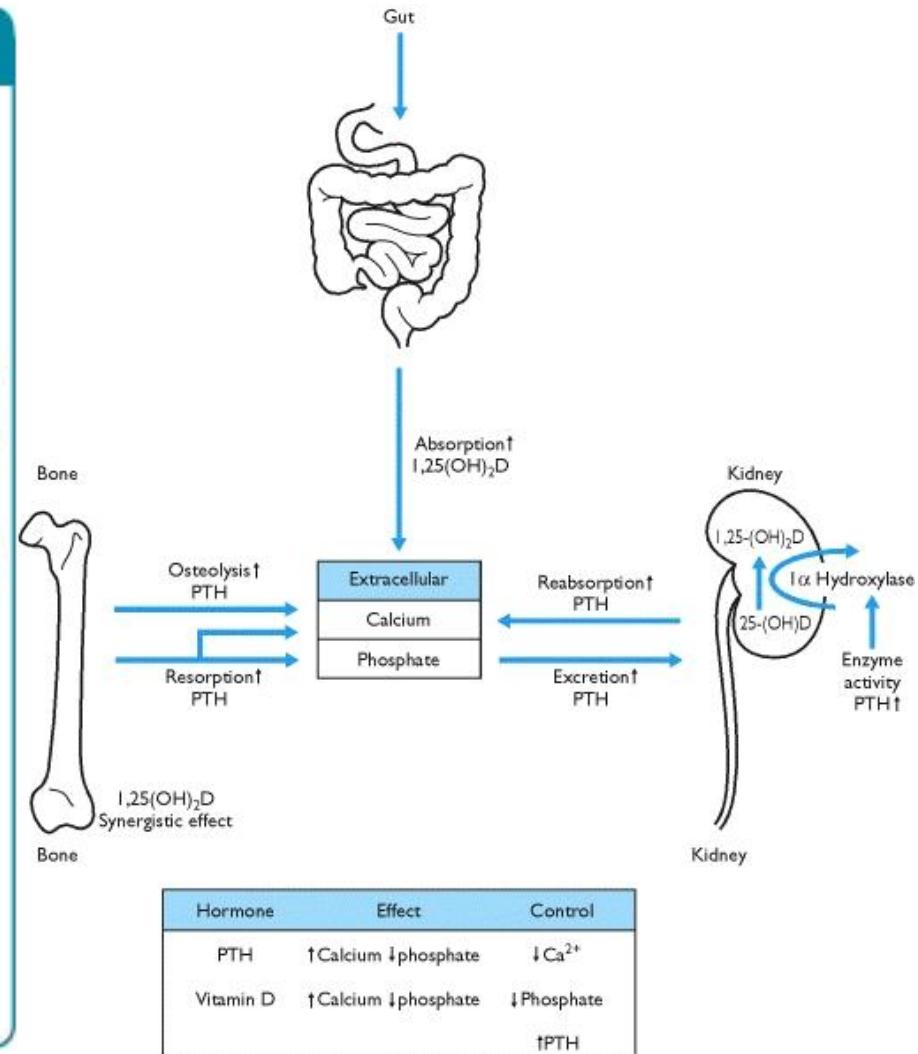
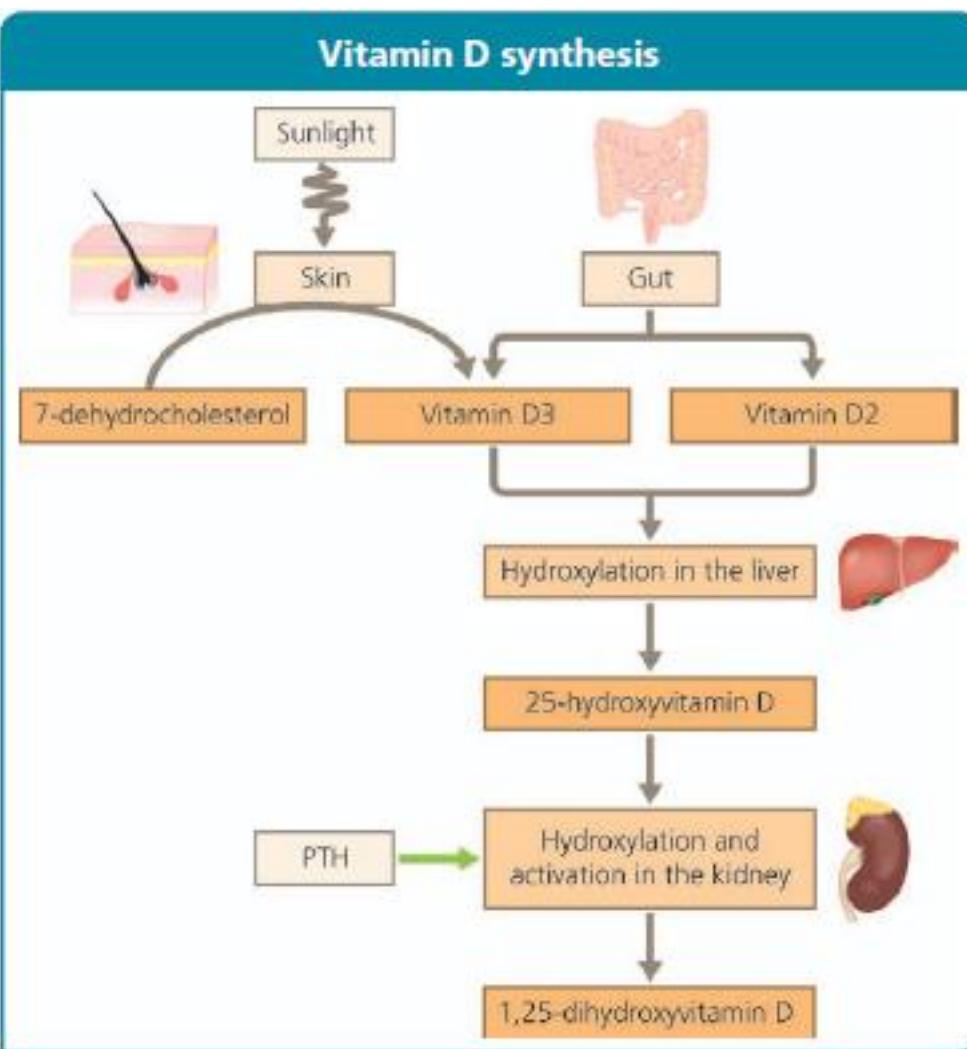
kidney, heart, adipose tissue,
bone...

Mgr. Emese Renczés, PhD.
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Renal hormones

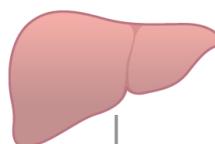
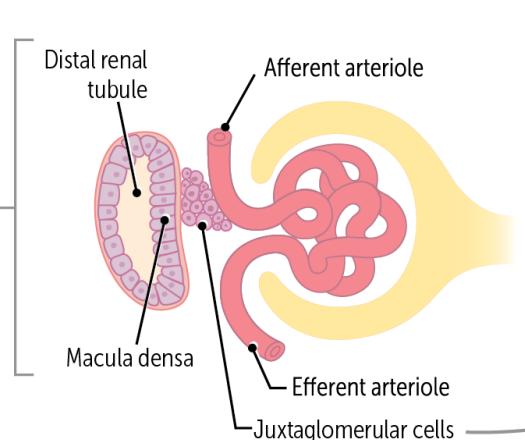
- erythropoietin
- calcitriol (1,25- dihydroxycholecalciferol)
- renin (= enzyme)

Calcitriol(vitamin D)



Renin

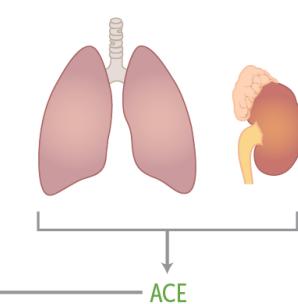
- ↓ BP (renal baroreceptors)
- ↓ NaCl delivery (macula densa cells)
- ↑ sympathetic tone (β_1 -receptors)



Angiotensinogen

Renin

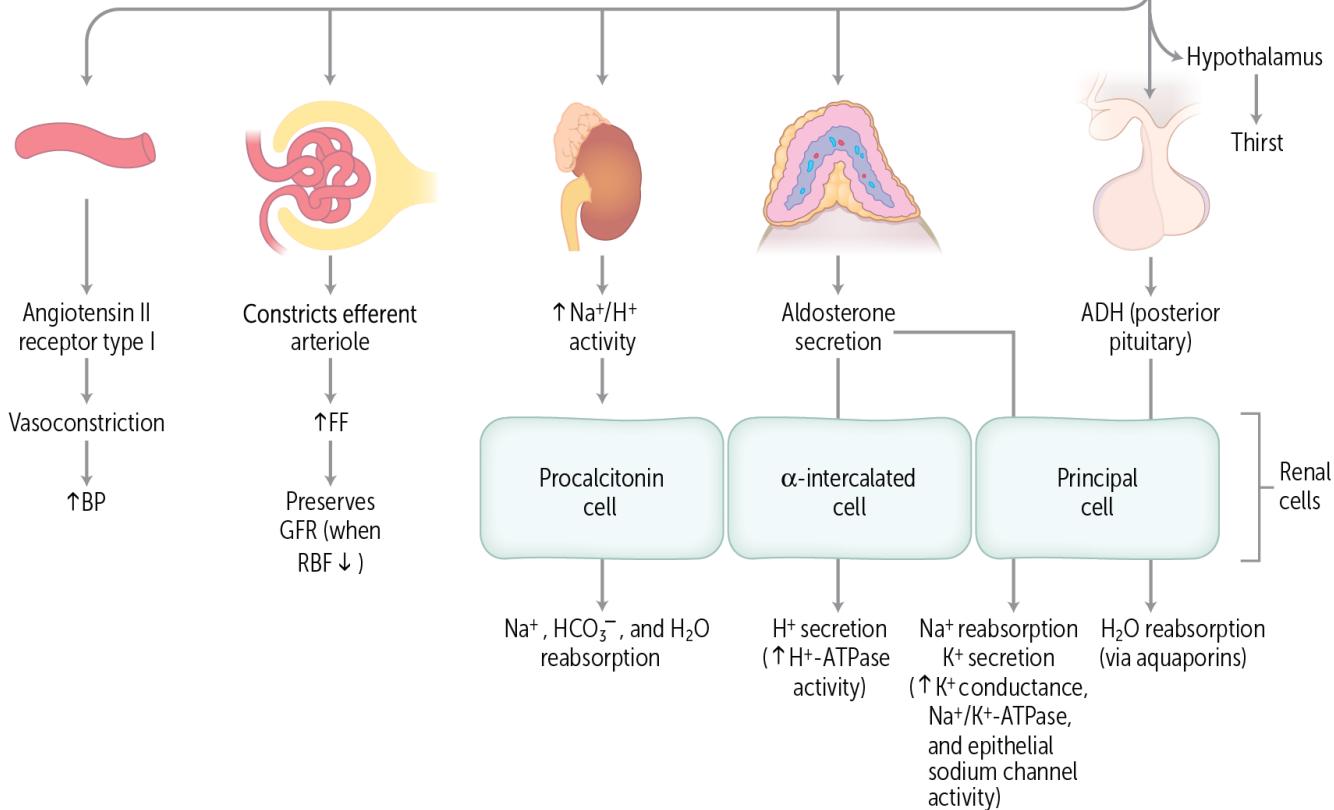
Angiotensin I



Angiotensin II

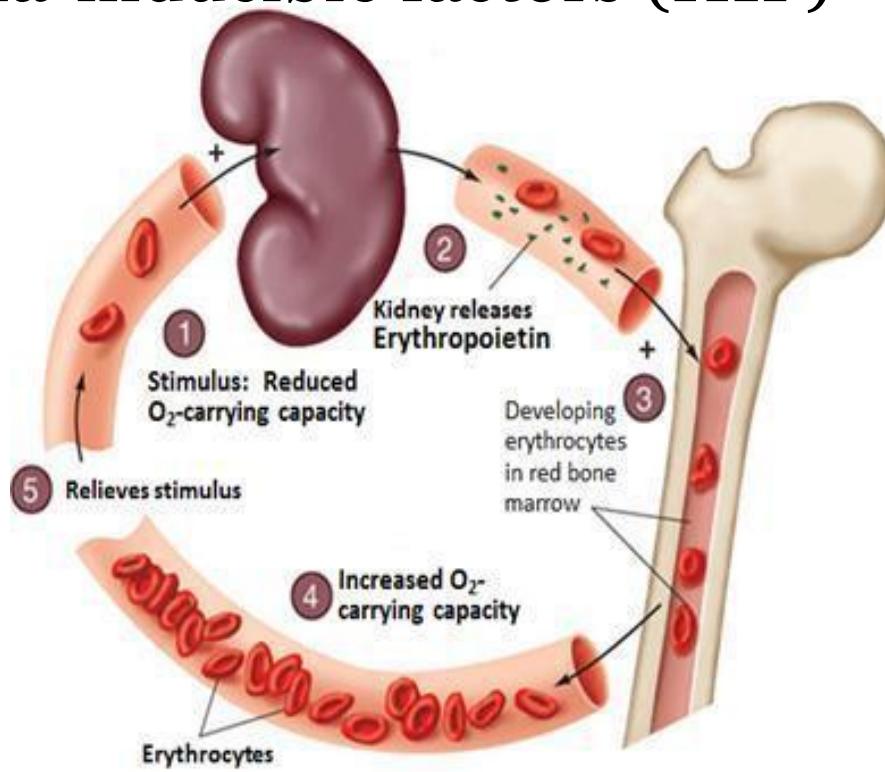
ACE

Hypothalamus
Thirst

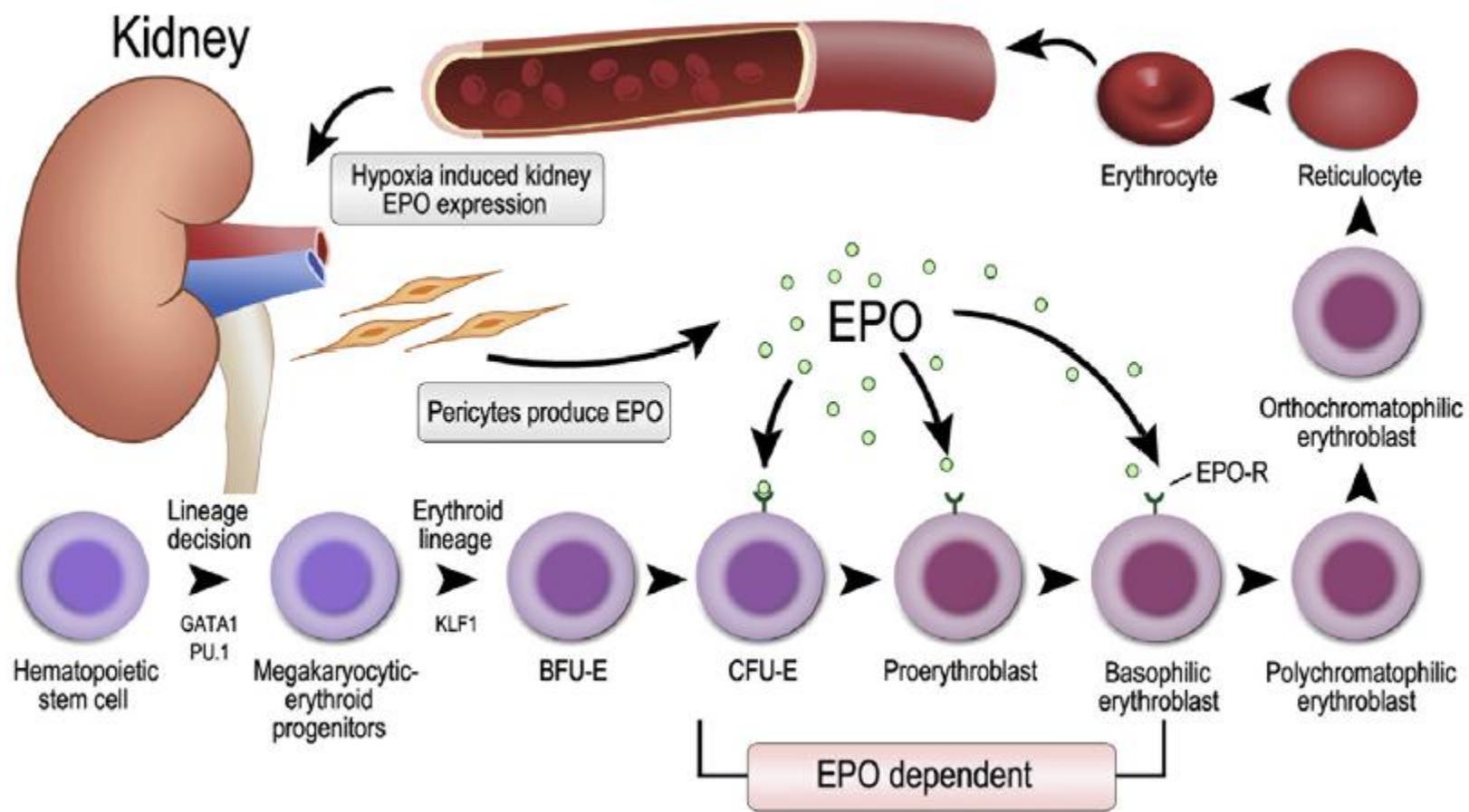


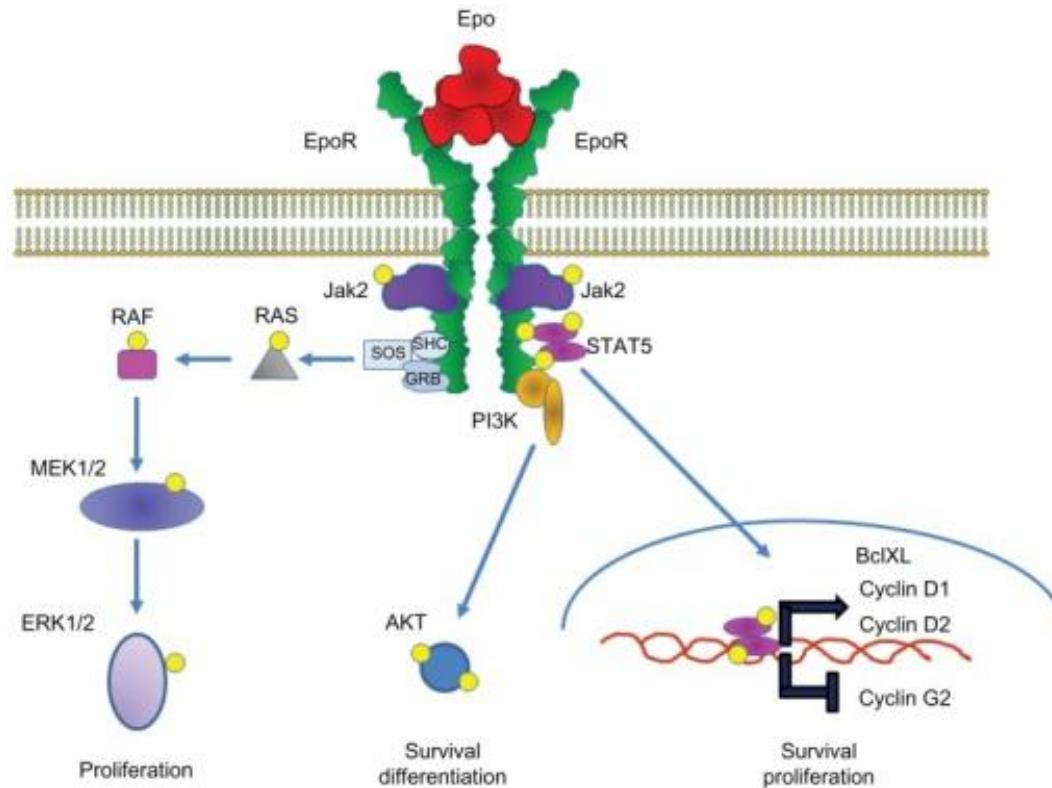
Erythropoietin

- Cellular hypoxia – anemia, hypoxemia
- hypoxia-inducible factors (HIF)



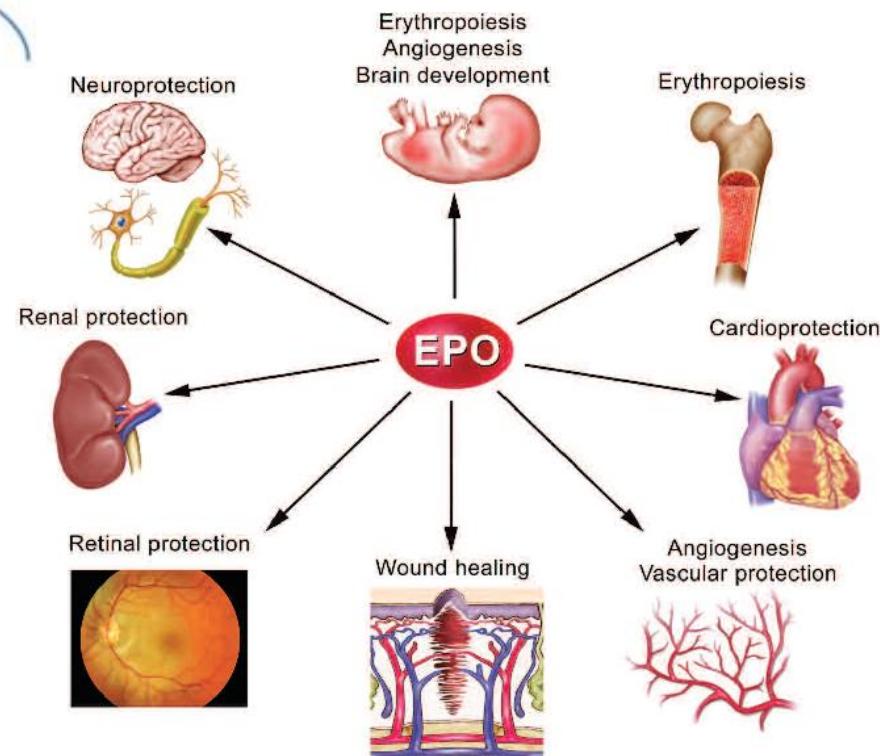
- 1 Kidneys detect reduced O₂-carrying capacity of blood
- 2 Kidneys respond by secreting erythropoietin (EPO) into the bloodstream
- 3 Erythropoietin (EPO) stimulates erythropoiesis by the bone marrow
- 4 Addition of circulating erythrocytes increase O₂-carrying capacity of the blood
- 5 Increase O₂-carrying capacity relieves the initial stimulus that triggered EPO secretion





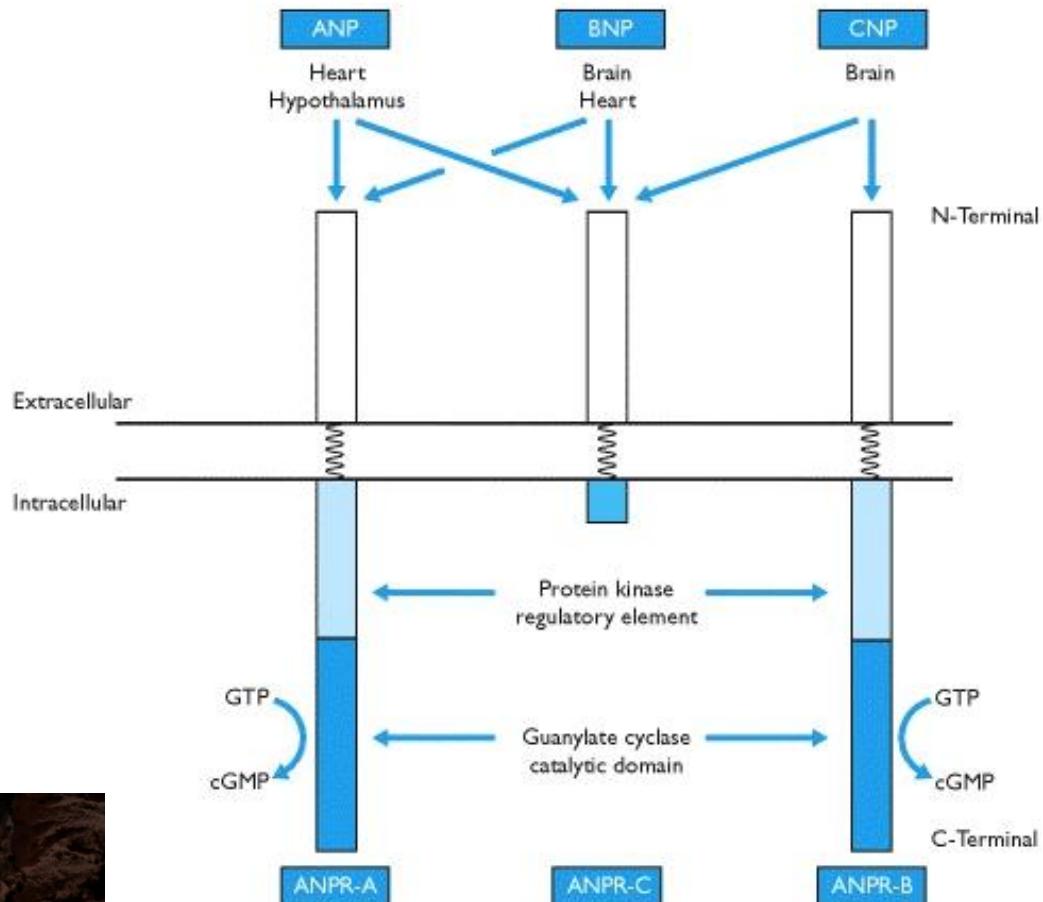
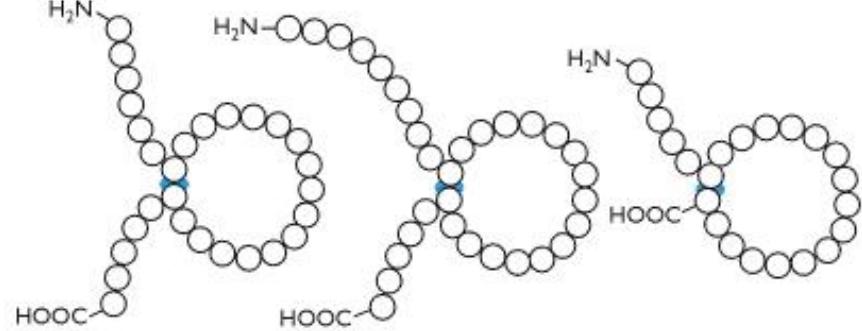
- recombinant human erythropoietin (rhEPO) – drug
- erythropoiesis-stimulating agents (ESA)

<https://www.youtube.com/watch?v=8uxTTucIb48>
<https://www.youtube.com/watch?v=ewgLd9N3s-4>
<https://www.youtube.com/watch?v=r7GoZ9vFCY8>



Natriuretic peptides

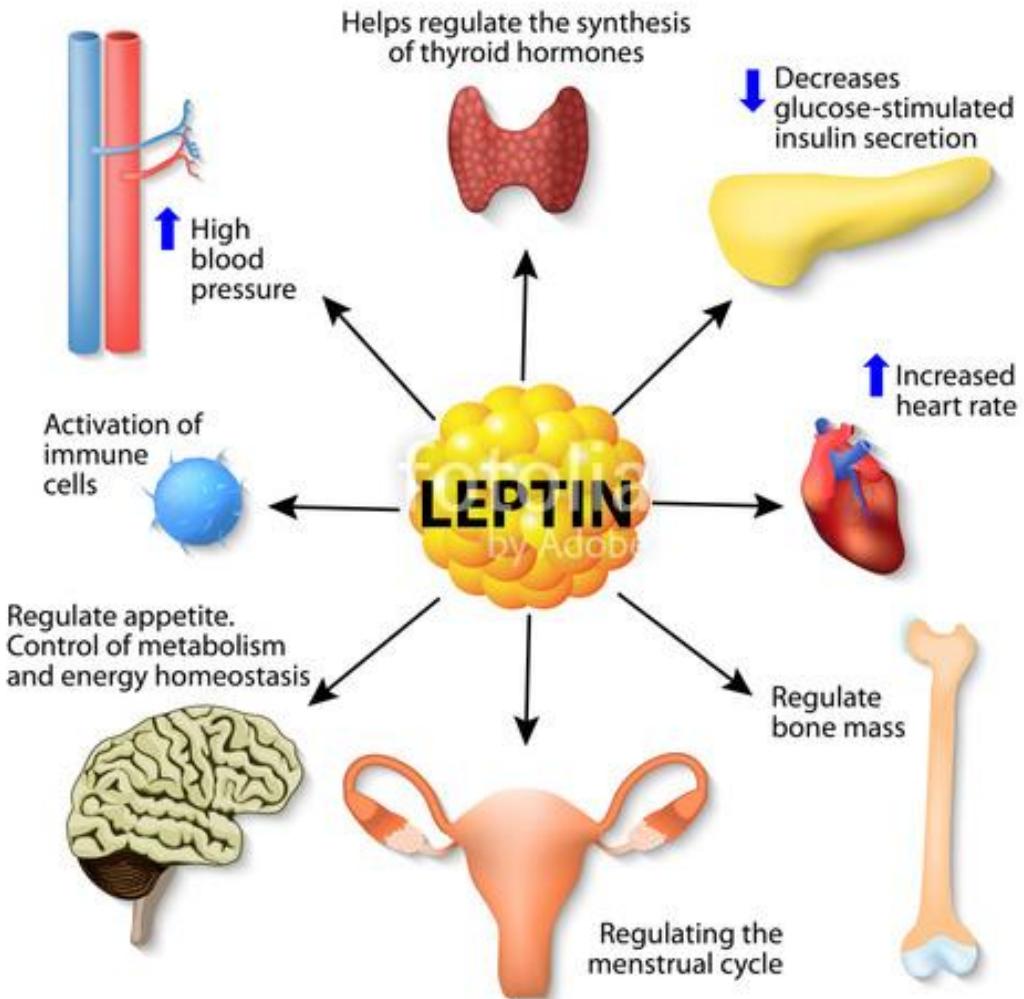
- Atrial (ANP)
- Brain (BNP)
- C-type (CNP)
- Functions:
 - body fluid homeostasis and blood pressure control:
 - natriuretic, diuretic effect
 - vasodilating activity
- urodilatin
- dendroaspis (DNP)

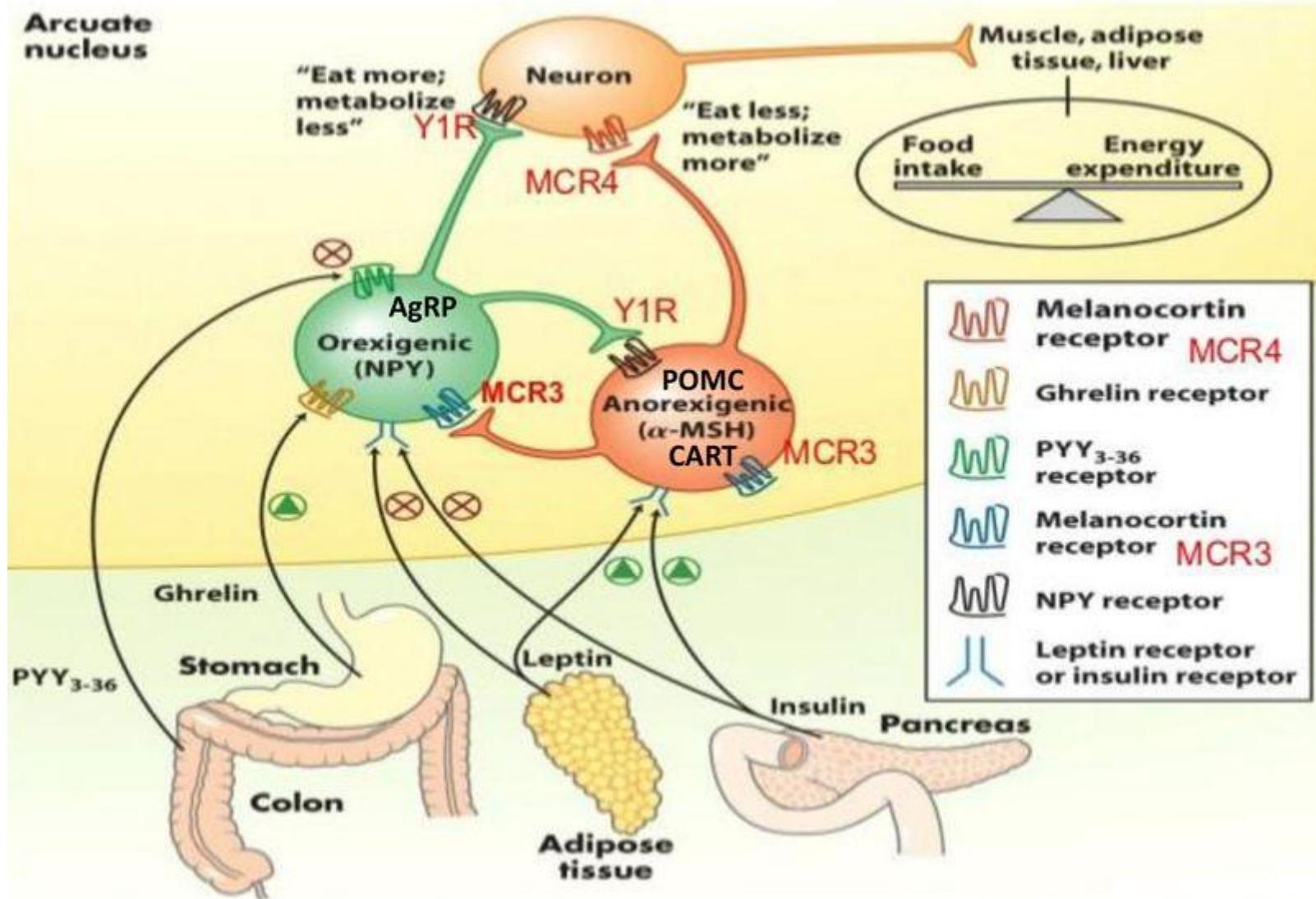


<https://www.youtube.com/watch?v=d2LtiPR44JI>

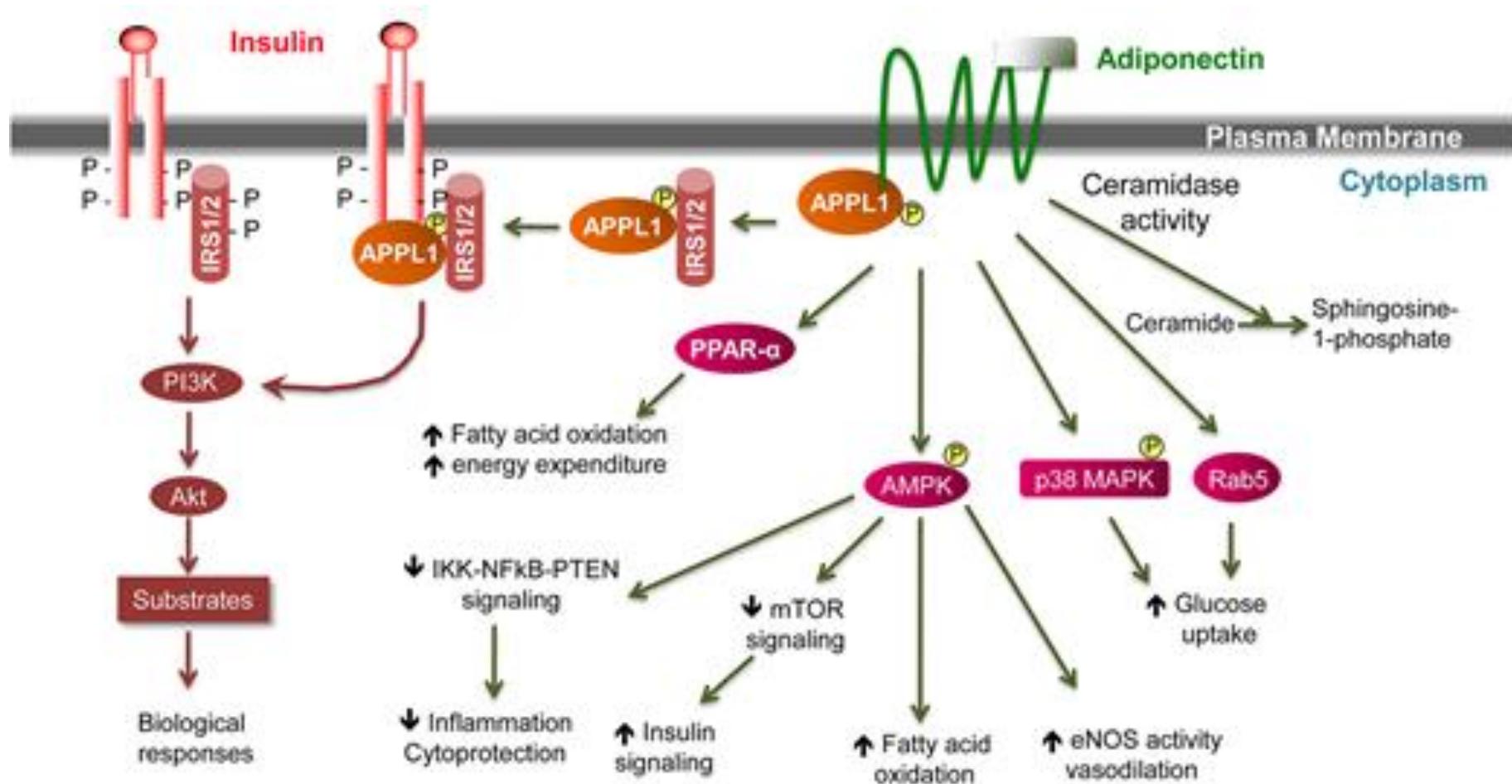
Adipose tissue

- Leptin
 - „the hormone of energy expenditure“
 - ↓ leptin sensitivity - obesity

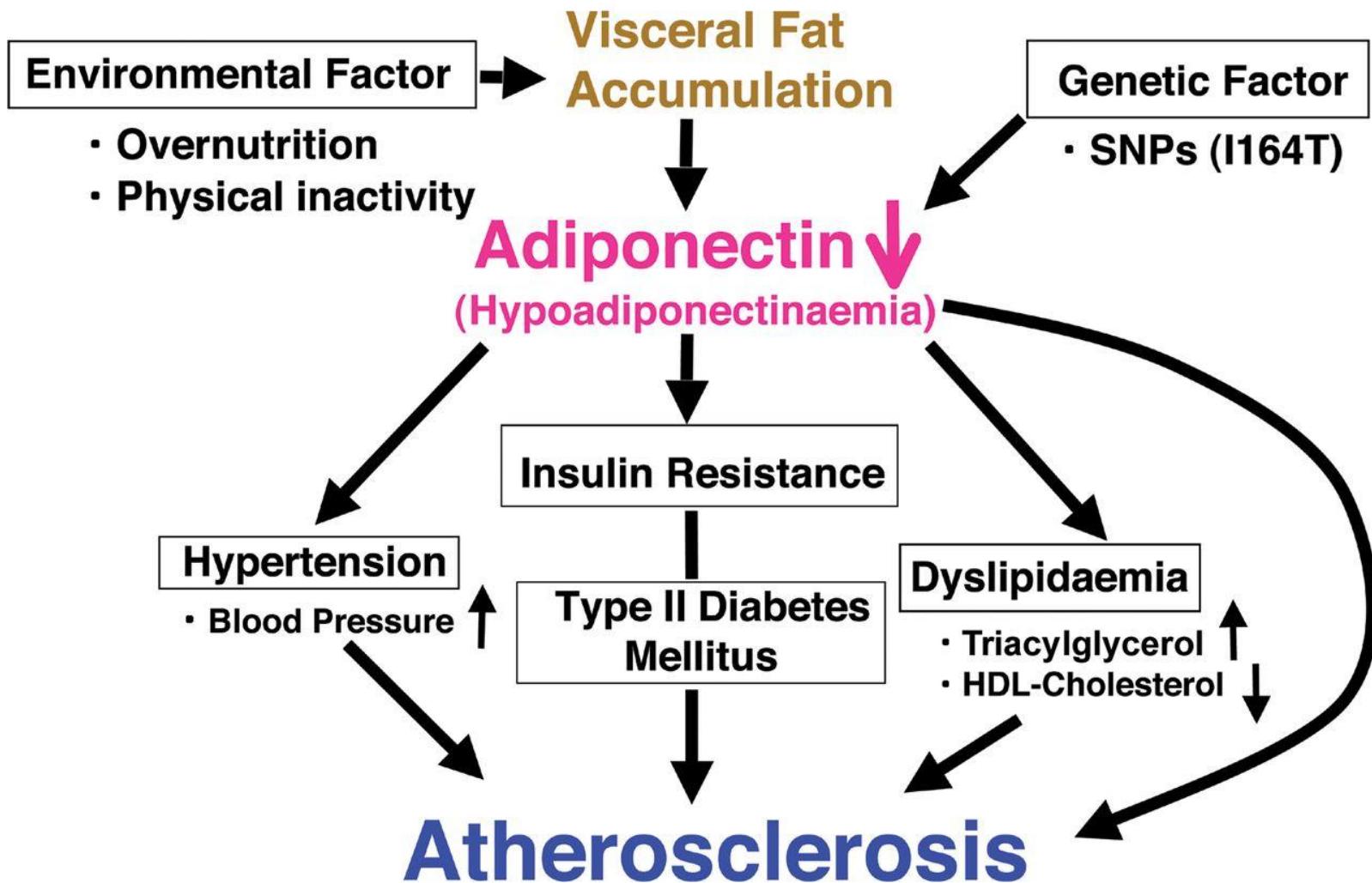


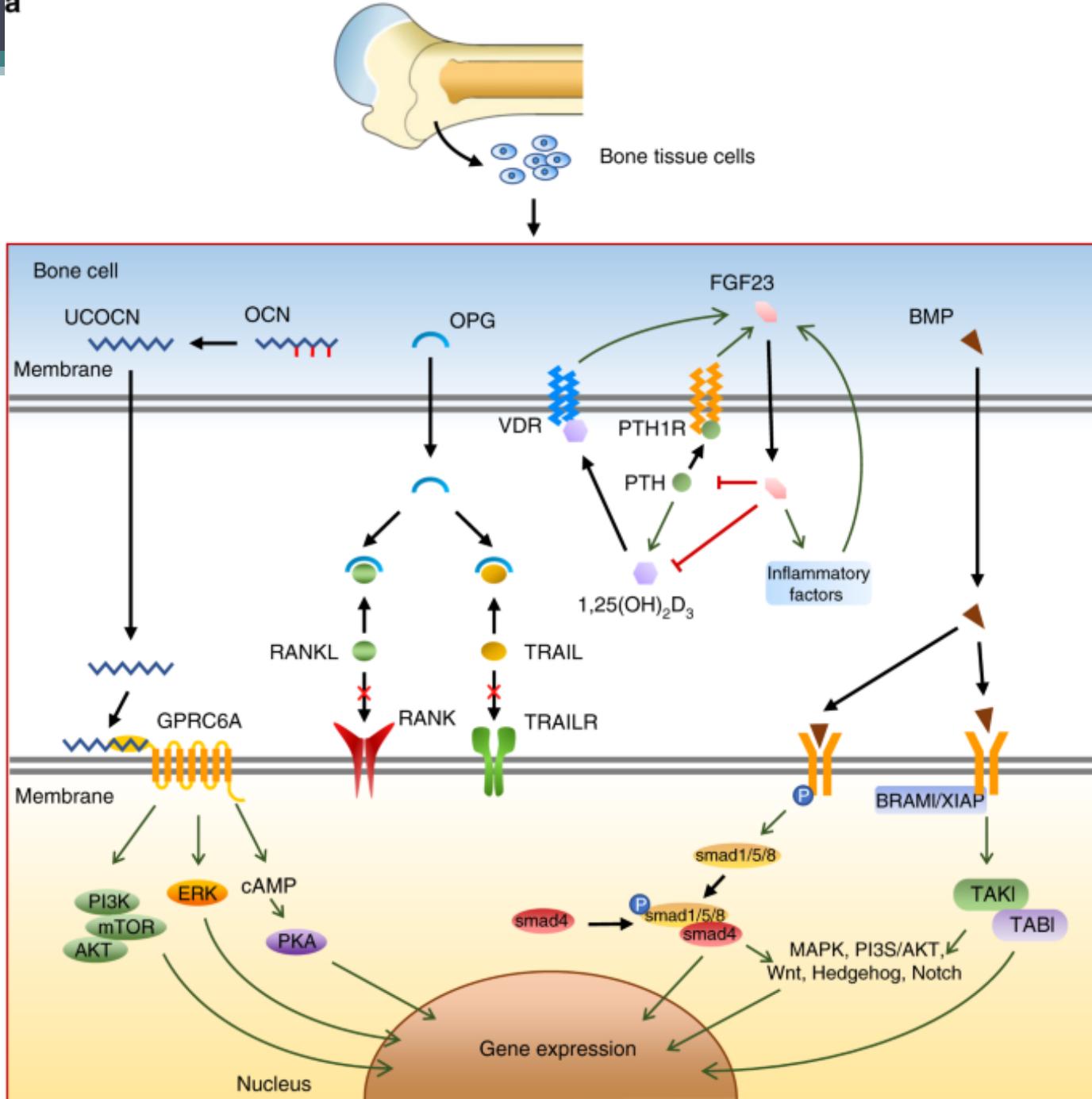


- Adiponectin



Metabolic Syndrome



a

QUIZ 4





CONGRATULATIONS!

*Vanesa Mikolajčíková
Lucia Martinkovičová*

1. Renín

- A. je hormón produkovaný v obličkách
- B. je enzym
- C. priamo stimuluje tvorbu aldosterónu
- D. stimuluje krvotvorbu

2. Sekrečná fáza menštruačného cyklu
je charakterizovaná

A. krvácaním

B. produkciou progesterónu

C. prudkým vzostupom koncentrácie LH

D. proliferáciou endometria

3. Progesterón je

- A. mužský pohlavný hormón
- B. metabolitom estrogénov
- C. produkovaný žltými telieskami po ovulácii
- D. produkovaný Graafov folikulmi pred ovuláciou

4. Ktoré tvrdenie **nie** je pravdou?

Polyúria je

- A. jeden z hlavných príznakov diabetus mellitus
- B. spojená polydipsiou
- C. následkom nefropátie u diabetických pacientov
- D. následkom osmotickej diurézy

5. Medzi kalciotropné hormóny nepatrí

A. parathormón

B. kalcitonín

C. tyroxín

D. vitamin D

6. Hypertenzia, nefrolitiáza a osteopénia sú následkami

A. hypokalciémie

B. hyperkalciémie

7. Sekretín

- A. je produkovaný G-bunkami v žalúdku
- B. stimuluje tvorbu HCL
- C. stimuluje vylučovanie kyslého obsahu žalúdka do tenkého čreva
- D. stimuluje produkciu NAHCO_3 v bunkách pankreasu

8. Ktoré tvrdenie nie je pravdou pre Gravesovu chorobu?

- A. Je príčinou tyreotoxikózy.
- B. Je autoimúnna choroba.
- C. Je spravádzaná vysokou koncentráciou TSH v krvi.
- D. Jedným z jej hlavných príznakov je strúma.

9. Antidiuretický hormón sa produkuje v

- A. adenohypofýze
- B. neurohypofýze
- C. obličkách
- D. hypotalame

10. Následkom jódového deficitu je

- A. hypertyreóza
- B. ↑ koncentrácia TSH
- C. destrukcia štítnej žľazy