

QUIZ TIME ARCHIVE

SUBJECT:

BIOCHEM

طوفان الارقصى

1. One of the following is NOT TRUE regarding the phototransduction process?

1. The visual pigment is photobleached only in present of bright light
2. The active rhodopsin contains all the trans retinal form of vitamin A
3. The light should pass through the thickness of the retina to reach the photoreceptor cells
4. Rhodopsin is GPCR with its ligand pre-bound
5. In complete darkness, photoreceptor cells are depolarized and release inhibitory neurotransmitters

Ans : c

2. Color blindness is due to defect in?

- a-Rods
- b-Cones
- c-Rods and Cones
- d-Rhodopsin
- e-Aqueous humor

Ans:(b)

3. 2nd messenger of phototransduction :

- A. cyclic AMP
- B. cyclic GMP
- C. IP3

Ans:(b)

4. The rate limiting step involved in the visual pigment regeneration process is?

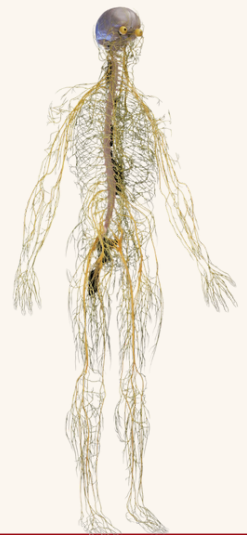
- a-The reduction of all trans retinal to all trans retinol
- b-The oxidation of 11-cis retinol to 11-cis retinal
- c-The esterification of all trans retinol to all trans retinyl ester
- d-The isomerization of all trans retinyl ester to 11-cis retinol
- e-The cleavage of the schiff base bond

Ans: d

5. In Rods, the cytoplasmic level of cGMP is high in absence of stimulus:

- a-Due to dark current
- b-Because the rate of synthesis of GMP by phosphodiesterase enzyme is high
- c-Due to the influx of Na⁺ ions
- d-Because phosphodiesterase enzyme is switched off
- e-Because guanylyl cyclase is inactive

Ans:(d)



6. The photobleached pigment is

- a. Rhodopsin
- B. Iodopsin
- C. Photopsin
- D. Meta-rhodopsin II
- E. 11-cis retinol

Ans: (d)

7. The cell that depolarizes in the resting state without being stimulated by photoreceptor cells is:

- a. Bipolar cell
- b. Ganglion cell
- c. Amacrine cell
- d. Horizontal cell

Answer: a

8. Visual adaptation refers to:

- a. Time needed to adapt to new intensity
- b. The ability to see in low-light conditions
- c. The process of color perception
- d. The transmission of visual signals to the brain

9. All of the following are preformed vit. A except?

Beta-carotene

Which of the following is correct regarding to schiff base bond:

Dissociate immediately

NOT ARCHIVE

?1 Where does the regeneration of visual pigment occur

- a) Photoreceptor cells
- b) Pigment epithelium layer in the retina
- c) Bipolar cells
- d) Ganglion cells

Answer: b) Pigment epithelium layer in the retina

2 Which of the following statements about phototransduction in the retina is correct

- a) Phototransduction is the process by which electrical signals are converted into light signals.
- b) Phototransduction occurs in the lens of the eye.
- c) In the absence of light, the photoreceptor cell is in a hyperpolarized state.
- d) The closure of Na^+ channels in the presence of light leads to the release of neurotransmitter molecules.

Answer: d) The closure of Na^+ channels in the presence of light leads to the release of neurotransmitter molecules.



?3What is the role of the activated rhodopsin (R^*) in the phototransduction cascade

- a) It activates the cGMP-gated Na^+ channels.
- b) It activates the guanylyl cyclase enzyme.
- c) It dissociates the G-protein "transducin" into its subunits.
- d) It converts cGMP to GMP.

Lec 1&2

Answer: c) It dissociates the G-protein "transducin" into its subunits.

4Dark adaptation is the slow recovery of visual sensitivity after exposure to a bright light

? Which of the following mechanisms is NOT involved in dark adaptation

- a) Switch-over between rods and cones
- b) Pupil size adjustment
- c) Regeneration of photopigments
- d) Activation of the cGMP-gated Na^+ channels

Answer: d) Activation of the cGMP-gated Na^+ channels

Lec 3

:The depolarization of olfactory receptor cell is further amplified by .1

- a- Outflux Of Cl^- ions
- b- Outflux Of K^+ ions
- c- Outflux Of Ca^{++} ions
- d- Influx of Cl^- ions
- e- Influx of K^+ ions

Ans:(a)

:One of the followings is NOT TRUE regarding taste bud components.2

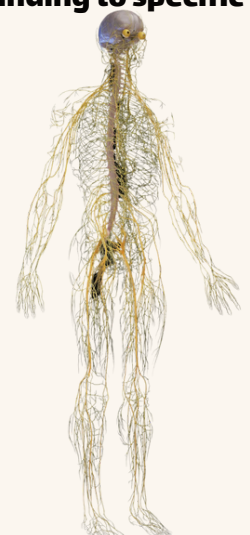
- a- Taste receptor cells are modified neuroepithelial cells which are innervated by nerve fibers at the basal end
- b- Taste pore is close to the apical end of the taste receptor cells
- c- Basal cells are epithelial cells which migrate from adjacent tissue and replace old supporting cells every 10 days
- d- Microvilli contains ion channels or GPCR receptors
- e- Tastants are chemical compounds which can stimulate taste receptor cells through binding to specific receptors on the surface of microvilli

Ans: (c)

:Sweet taste is mediated by.4

- a-cGMP response only
- b-cAMP response only
- c-IP3 response only
- d-Both cAMP and IP3 responses
- e-Both cAMP and cGMP responses

Ans:(d)



Lec 3

? 5 The second messenger which mediates the bitter taste is

- a. CAMP
- b. CGMP
- c. IP3
- d. PIP2
- e. ATP

Ans: (c) slide: 17

? The olfactory receptor cells are examples of -----neurons .6

- a- Sensory
- b- Multipolar
- c- Association
- d- Bipolar
- e- Inhibitory

Ans:(d)

: site of receptor for smell.7*

- a.at the apical of olfactory cell
- B.at the base of olfactory cell
- C. With olfactory bulb
- D.at cribriform plate of ethmoid bone

Ans: a

:IP3 second messenger in.8

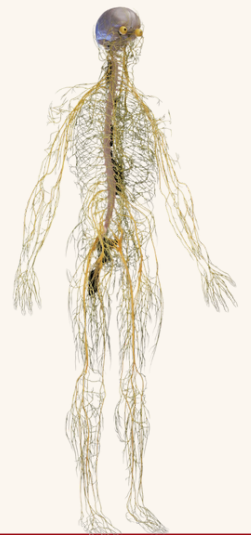
- a.sweet taste
- B.sour taste
- C.bitter taste
- D.both sweet and bitter
- E. Ummami taste

Ans:(d)

? Which of the following is not associated with sour taste.9

- A. H⁺ ions
- B.amiloride sensitive Na⁺ channels
- C. K⁺ channels
- D. Na⁺ concentration
- E. G-protein

Ans:(e)



What is the term used to describe the overall perception that results from both taste and smell?

- a) Flavour
- b) Taste bud
- c) Aroma
- d) Sensation

ans: a

. Which of the following is NOT one of the primary tastes?

- a) Metallic taste
- b) Sweet taste
- c) Salty taste
- d) Umami taste

Answer: a) Metallic taste

Which taste perception is mediated by the activation of metabotropic glutamate receptor 4?

- a) Sweet taste
- b) Salty taste
- c) Sour taste
- d) Umami taste

ans: d

How are Na^+ ions detected by taste cells?

- a) Through amiloride-sensitive Na^+ channels
- b) Through G protein-coupled receptors
- c) Through voltage-gated Ca^{2+} channels
- d) Through K^+ channels

ans: a

What is the molecular mechanism of taste perception?

- a) Chemicals in food are dissolved by saliva and enter taste buds
- b) Flavor molecules fit into receptors on the microvilli of taste cells.
- c) Neurotransmitters are released onto the nerve endings of taste cells
- d) The taste message is carried to the brain by cranial nerves

ans: b

