بسم الله الرحمن الرحيم

Past paper MID
Lecture 1-2

﴿ إِنِّي تَوَكَّلْتُ عَلَى ٱللَّهِ رَبِّي وَرَبِّكُمْ ۚ مَّا مِن دَآبَّةٍ إِلَّا هُوَ ءَاخِذٌۢ بِنَاصِيَتِهَآ ۚ إِنَّ رَبِّي عَلَىٰ صِرَٰطٍ مُّسْتَقِيمٍ ﴾

Written by: Mahmoud Alabsi

Reviewed by: Osama alhamdan

BIOCHEMISTRY

Past paper (1-2)

Visual transduction involves the following molecular feature:

A) Ca2+ ions bind to rhodopsin kinase and inhibit it
B) Retinal plasma membrane is very fluidic easing molecular interactions
C) Amplification involves activation of CGMP phosphodiesterase by G proteins
D) Arrestin binding to rhodopsin activates its phosphorylation
E) During adaptation to the dark, recoverin is mainly localized to the inner segment

Answer: B

Which of the following is TRUE about arrestin:

A) Works by phosphorylation of target protein
B) In Dark it is existed at high levels at the outer segments of photoreceptors
C) It causes the release of all cis retinal rhodopsin

Answer:A

All of the following are mechanisms to amplify visual signal except:

A) Each photon excites many rhodopsin
B) Each rhodopsin excites many transducin
C) Each transducin excites many PDE
D) Each PDE converts many CGMP
E) All in the same compartment

Answer:C

Activation of transducin by light activates an enzyme which:

A) Hydrolyzes cGMP
B) Increases the dark current
C) Activates adenylyl cyclase
D) Releases calcium from intracellular stores
E) Depolarizes the membrane

Answer:A

SAM is used in all of the following except:

1. N-methyl trans
2. Deamination
3. Methylation of phosphodylether
4. COMT

Answer:B

The 'retrograde' mechanism of NO (nitric oxide) means:

1. It is produced in the post-synaptic neuron.
2. It regulates the pre-synaptic neuron.
3. It activates guanylyl cyclase.
4. It diffuses to nearby cells.
5. It binds to post-synaptic receptors.

Answer:B

Which is true about neuropeptides and small transmitters?

1. Both released by vesicular mechanism.
2. Both synthesized in cell body of presynaptic cell.
3. Both can be released from a site far away from the site of Ca entry.
4. Both induce a signal that can be terminated by reuptake.

Answer: A

An excitatory neurotransmitter that leaks to the cytosol to be converted to another neurotransmitter, can be recycled through a presynaptic neuron transporter and degraded by the liver or presynaptic enzymes is:

1. Gamma-aminobutyric acid
2. Glycine
3. Norepinephrine
4. Serotonin
5. Acetylcholine

Answer: C

Deficiency of vitamin B6 (pyridoxal phosphate) will result in the impairment of all the following pathways EXCEPT:

1. 1. DOPA to dopamine
2. Norepinephrine to epinephrine
3. Aspartate to glutamate
4. Tryptophan to serotonin
5. Histidine to histamine

Answer: B

A neurotransmitter that is not deactivated by MAO:

1. GABA
2. Histamine

Answer:A

When light strikes the eye there is an increase:

1. The activity of the transducin
2. The amount of transmitter released from the photoreceptors
3. The concentration of all-trans retinal within the photoreceptors
4. The concentration of calcium within the photoreceptors
5. The activity of guanylyl cyclase

Answer: A

Which one of the following is TRUE about vision:

Answer: cGMP decreases when transducin activated

Which statement is WRONG about signal termination in photoreceptor cells:

Answer: Inactivation of G cyclase due to decrease intracellular [Ca]

Can’t cross BBB:

Answer: Glutamate

Which one of the following is WRONG about glutamate?

Answer: Cannot be synthesized inside neurons

The indicator of Parkinson’s disease is:

Answer: Homovanillic acid

Which one of the following is WRONG about catecholamine synthesis:

Answer: Dopamine and norepinephrine have vesical synthesis

Which of the following is expected to happen if vesicular ATPase was inhibited?

Answer: neurotransmitters will not enter the vesicle.

Which of the following causes termination of the light signal?

Answer: Ca+2-Cal

For any feedback, scan the code or click on

Corrections from previous versions:

Versions	Slide # and Place of Error	Before Correction	After Correction
V0 → V1			
V1 → V2			