

Neurochemistry basics

Effects NT's are released together combined with other chemicals

3 Principles

Associations NT's are associated with specific attributes

Categories NT's are categorized by their chemical structures

Excitatory/inhibitory NT's are EITHER excitatory OR inhibitory

Small Molecule NT's

Acetylcholine Chemical messenger

Amines include dopamine, serotonin, antihistamine

Amino Acids amine+carboxyl group; include glutamate and GABA

Peptides

Peptides chains of amino acids; largest group of NT's

Other NT's

Lipids organic compounds; not water soluble, include cannabinoids

Nucleosides can be released in places other than the synapse; most prominent is adenosine

Gases diffuse in other places in the nervous system; include carbon monoxide and nitric oxide

Achetylcholine

Who discovered it? Otto Lovi

Where does it come from? the binding of acetate *acetate* and *choline*; choline is found in diet

Achetylcholine (cont)

What breaks down ACh? AChE (acetylcholinesterase)

What does it do in the PNS? activates muscles; receptors for activation are Nicotinic receptors

Excitatory or Inhibitory? excitatory but can excite inhibitory NT's

What does it do in the CNS? primary NT in the hippocampus; critical for learning and memory; helps maintain attention

How does it affect sleep? rises during REM sleep; is usually an arousing NT

Is it linked with depression? if ACh is very high, yes. causation is not proven

Monoamines

Catecholamines arousing neurotransmitters

What breaks down Catecholamines? MAO (monoamine-oxidase); allows for more amines in synaptic cleft

Catecholamines?

How does MAO affect the brain/body? very low MAO is linked with aggression; low MAO+being abused=high chance of becoming an abuser; combination of life experiences and MAO determine likelihood and severity of depression



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