Glutamate Encyclopedia Article

Glutamate

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Glutamate

Glutamate (GLU) is a dicarboxylic aliphatic amino acid. Chemically symbolized as $COOH\text{-}CH_2\text{-}CH_2[NH_2]\text{-}COOH$, it is abundant (micromolar concentrations/mg protein) in NEURONS (nerve cells) as well as in almost all other cells of the body. Its role as the major excita-tory NEUROTRANSMITTER in the brain was recognized reluctantly; its universal ability to excite all neurons was considered too nonspecific for a neuro-transmitter, so it awaited the development of drugs that antagonized GLU and the specific neuro-pathways from which it was released.

Its source for this special role in NEUROTRANSMISSION is unknown, but the synaptic vesicles of glutamatergic neurons have a selective ion-exchange mechanism to compartmentalize GLU from other metabolic pathways. Excessive GLU-receptor activation can lead to neuronal death.

See Also

Research)

Bibliography

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