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# Cocaine

National Cancer Institute

## Source

National Cancer Institute. *Cocaine*. NCI Thesaurus. Code C80153.

A tropane alkaloid with central nervous systems (CNS) stimulating and local anesthetic activity. Cocaine binds to the dopamine, serotonin, and norepinephrine transport proteins and inhibits the re-uptake of dopamine, serotonin, and norepinephrine into pre-synaptic neurons. This leads to an accumulation of the respective neurotransmitters in the synaptic cleft and may result in increased postsynaptic receptor activation. The mechanism of action through which cocaine exerts its local anesthetic effects is by binding to and blocking the voltage-gated sodium channels in the neuronal cell membrane. By stabilizing neuronal membranes, cocaine inhibits the initiation and conduction of nerve impulses and produces a reversible loss of sensation.