

[Open Peer Review on Qeios](#)

Oxycodone

National Cancer Institute

Source

National Cancer Institute. *Oxycodone*. NCI Thesaurus. Code C29309.

A semi-synthetic, morphine-like opioid alkaloid with analgesic activity. Oxycodone exerts its analgesic activity by binding to the mu-receptors in the central nervous system (CNS), thereby mimicking the effects of endogenous opioids. Binding of the opiate receptor stimulates the exchange of GTP for GDP on the G-protein complex and inhibits adenylate cyclase, thereby preventing cAMP production. Subsequently, the release of nociceptive neurotransmitters, such as substance P, gamma-aminobutyric acid (GABA), dopamine, acetylcholine, and noradrenaline, is inhibited. Oxycodone also inhibits the release of vasopressin, somatostatin, insulin, and glucagon. In addition, oxycodone closes N-type voltage-gated calcium channels and opens G-protein-coupled inwardly rectifying potassium channels resulting in hyperpolarization and reduction of neuronal excitability.