like activities following cerebroventricular injection, e.g. analgesia and catatonia. Behavioural effects are also exerted. In vitro, they decrease the amplitude of muscle contractions induced electrically in the guinea pig ileum and in the mouse vas deferens. All of these effects are reversed by the opiate antagonist, naloxone.

A number of peptides possessing naloxone-reversible opioid activity, but distinct from beta-endorphin and the enkephalins, have been reported in pituitary and hypothalamic extracts and in human blood.

Hundreds of enkephalin analogues have been synthesized in an effort to find a nonaddictive opiate. Among the structures showing higher potency are those having a D-alanine at the 2-position, an N-methylated phenylalanine at the 4-position, and methioninol sulfoxide at the C-terminus. The pentapeptide exhibited definitive analgesic activity (even after oral administration). It was about 30,000 and 1,000 times more potent when injected than Met-enkephalin and morphine, respectively, and twenty-three times as active as beta-endorphin. Whereas most analogues were found to be opiate agonists, evidence for an antagonistic nature of N-Allyl-Leu5 -enkephalin was given.