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# PPE-Expressing Replication-Defective HSV-1 Vector NP2

National Cancer Institute

## Source

National Cancer Institute. *PPE-Expressing Replication-Defective HSV-1 Vector NP2*. NCI Thesaurus. Code C79845.

A replication-defective (ICP4-deleted) herpes simplex virus type 1 (HSV-1) viral vector expressing the human preproenkephalin A (PPE) gene with potential antinociceptive activity. Upon intradermal administration, PPE-expressing replication-defective HSV-1 vector NP2 is transported by retrograde axonal transport to the dorsal root ganglion (DRG) and becomes dormant. In the DRG, the vector transduces sensory neurons with high efficiency, delivering the engineered PPE gene; transduced neurons then express the protein proenkephalin A, the precursor for Met- and Leu-enkephalin. After proteolytic cleavage from proenkephalin A in the DRG neuronal cytosol, transgene-mediated Met- and Leu-enkephalin bind to mu and gamma- opioid receptors, which may result in the inhibition of nociceptive neurotransmission.