## A Precursor protein Pre-proenkephalin MIM M M Pre-proopiomelanocortin αMSH γ-LPH **B-END** CLIP Pre-prodynorphin D Pre-proorphanin FQ B Proteolytically processed opioid peptides Amino acid sequence Methionine-enkephalin Tvr Glv Glv Phe Met OH Leucine-enkephalin Tyr Gly Gly Phe Leu OH

Tyr Gly Gly Phe Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile Val Lys Asn Ala

Tyr Gly Gly Phe Leu Arg Arg Ile Arg Pro Lys Leu Lys

Tyr Gly Gly Phe Thr Gly Ala Arg Lys Ser Ala Arg Lys

Tyr Gly Gly Phe Leu Arg Lys Tyr Pro Lys

His Lys Gly Gln OH

Trp Asp Asn Gln OH

Leu Ala Asn Gln

β-END

D

β-Endorphin

Dynorphin

α-Neoendorphin

Orphanin FQ