

Complementary nucleotide sequence for monitor peptide, a novel cholecystokinin-releasing peptide in the rat

S-I.Fukuoka and G.Scheele

Laboratory of Cell and Molecular Biology, Dana Research Institute, Harvard Medical School, Boston, MA 02215, USA

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Monitor peptide has been recently described as a novel cholecystokinin (CCK)-releasing peptide in rat pancreatic juice (1-4). Infusion of purified monitor peptide leads, in a dose-dependent manner, to CCK release from the gut mucosa into the blood circulation and to concomitant enzyme and fluid secretion from the pancreas. In tissue culture it demonstrates growth stimulating activity (5,6). The amino acid sequence for this 61 residue peptide, apparently the first described luminal hormone in the gastrointestinal tract, has been published (3).

Three cDNA transcripts encoding rat monitor peptide have been cloned from a rat pancreas Lambda ZAP-II phage library using specific primers deduced from the amino acid sequence and the polymerase chain reaction. We present here the nucleotide sequence of one of these transcripts which demonstrates an open reading frame encoding an 18 residue signal sequence followed by the 61 residue mature peptide.

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                                -18                -10                -1 1
                                MetLysValAlaIleIlePheLeuLeuSerAlaLeuAlaLeuLeuSerLeuAlaGly
CCCTGCACAGTTCGTCTGAGTTTTGGACCTAGGTCTACAACCATGAAGGTAGCAATTATCTTTCTCAGTGCTTTGGCCCTGCTCAGTTAGCAGGT 99
                                ---
                                10                20                30
AsnProProAlaGluValAsnGlyLysThrProAsnCysProLysGlnIleMetGlyCysProArgIleTyrAspProValCysGlyThrAsnGlyIle
AACCTCCAGCTGAGGTGAATGGAAAACGCCTAATTGCCCTAAGCAAATTATGGGATGTCCCAGGATTTATGACCCCTGTGTGGGACTAACGGAATT 198
                                40                50                60
ThrTyrProSerGluCysSerLeuCysPheGluAsnArgLysPheGlyThrSerIleHisIleGlnArgArgGlyThrCys *
ACTTACCCAGTGAATGCAGTCTGTGCTTTGAAAACAGGAAATTCGGAACATCTATCCACATTCAGAGGAGAGGGACTTGCTGAATGTCCTGATTTTGA 297
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AATCTTTTAGGGCTACCATAATGTTTAGCAAGAAGTTTGTCTGAATAAATGCATCTGAACATA 360
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