

Expression of two growth hormone genes in the *Xenopus* pituitary gland

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Growth hormone (somatotropin) is a 22-kD polypeptide produced by the somatotrophs of the pituitary gland. During differential hybridization analysis of biosynthetically active and inactive *Xenopus* pituitary cells (1), a cDNA clone (pX8) was isolated and found to code for *Xenopus* growth hormone mRNA. Subsequent screening of the pituitary cDNA library with pX8 resulted in the isolation of cDNA clones structurally different from this clone, indicating expression of two growth hormone genes in the *Xenopus* pituitary gland. In the sequences presented nucleotide and amino acid differences are indicated by colons and by the presence of amino acids in the B sequence, respectively. Amino acid similarity between *Xenopus* growth hormones A and B is remarkably low (only 75%); similarities with other vertebrate growth hormones range from 43% (salmon) to 78% (duck).

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      F C Y S E T I P Y P T D K D N T H Q K S D M E L L R F
A: 5'----TTCTGTTACTCTGAAACCATGCCTTATCCGACAGACAAGAGACAACACTCACCAAAAGTCTGACATGGAACCTTTTGCGGTTG      81
      S Q T L I Q S W L N P V Q A L S K V F S N N L V F G S S D
A: TCTCAGACCCTCATTCAATCGTGGCTGAATCCAGTCAAGCCCTGAGCAAAGTGTTCAGCAACAACCTGGTGTGTTGGAAGTCTCGAT      168
      B:
      5'----TCCGAT
      V Y E R L K Y L E E G I Q A L M R E L E D G S F R S F P V
A: GTGTACGAGAGGCTGAAGTATCTGGAGGAAGGCATCCAGGCTCTGATGAGGGAGCTGGAGGATGTTAGCTCCCGAGCTTCCCTGTC      255
      B: GTCTACGAGAGACTGAAGTACCTTGAGGAAGGCATCCAGTCCCTGATCCGGAACTGGAAGATGGAAGCTCCCGAGCTACTCTCTTT
      S I L Y S F
      L R P L Y E R F D I N L R S D E A L V K V Y G L L S C F K
A: CTGAGACCCTGTACGAGAGGTTTGACATCAACCTGCGCAGTGACGAAGCTTTGGTAAAAGTCTACGGCTTCTGTCTGCTTCAAG      342
      B: ATGAGAAGCCCTTATGAAAGGTTGGACATCAACATGCCACTGACGACGGCCTTTAAAAGTCTACGGCTCTCTGTCTGCTTCAAG
      M T P L M T D G L
      K D M H K V E T Y L K V M K C R R F V E S N C T I ***
A: AAAGATATGCACAAAGTGGAGACCTACATAAAGTCATGAAGTCCCGGCGCTTTGTAGAAGCAACTGCACCATTTAA----3'      429
      B: AAAGCATGCACAAAGTGAAGACCTACATGAAAGTCATCAAGTCCCGACACTTTGCCGAAAGCAAGTGTGTAATTTAAATTGCTG
      M I H A K V ***
      B: GTAAACACAAGTTTGCCATATCCCTGACCTACCGAAGCATCTACAAAACACAGCTCTATGTTATAACGCTGCCTCTCATGGCGAGA      516
      B: AAGGGGACTGGATAAAGTTATATATTAGATTACAAGTTCACCCCTCCTTCCCTGCTTTTCGTGCTGCTGAAATCTTTTGTAAATGAG      603
      B: GATTATTACATAATGCTAAATAAAGATGCATTTACAGATACATAAAAAAAAAAAAAAAAAAAAAA----3'      669
    
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REFERENCE

1. Martens, G.J.M. (1988) FEBS Lett. 234, 160-164.