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论文

东北马鹿Myostatin基因编码序列的克隆及序列分析

巴恒星,邢秀梅,李春义,杨福合

中国农业科学院特产研究所| 吉林132109

摘要:

根据Myostatin基因的保守性,选择牛(Bos taurus cattle 登录号:AB076403)的Myostatin序列为模板进行引物设计,首次从东北马鹿基因组中扩增出Myostatin序列,扩增产物连接pMD18 T载体,克隆出3个外显子片断。根据5′-GU-AG-3′规则和同源基因比对拼接出完整的编码序列,全长为1 128 bp(发表到GenBank 登录号:EF629535),Myostatin蛋白前体由375个氨基酸组成。同源比较结果表明:Myostatin在进化过程中具有高度保守性,东北马鹿与猪Myostatin编码序列同源性最高达到98%,鸟类与哺乳动物间Myostatin编码序列同源性为85%～89%,鱼类与其他动物间编码序列同源性为60%～67%。Myostatin编码序列能够真实反映远缘物种的进化关系,可以作为远缘物种进化分析较理想的标记。

关键词: 东北马鹿 Myostatin 基因克隆 同源性分析

Cloning and Sequence Analysis of Exon of Dongbei Wapiti Myostatin Gene

BA Heng-xing, XING Xiu-mei, LI Chun-yi, YANG Fu-he

Institute of Special Economic Animal and Plant, Chinese Academy of AgriculturalSciences, Jilin 132109|China

Abstract:

Three exon fragments of the Myostatin sequence of Dongbei wapiti were cloned from the latest species of cattle (Bos taurus cattle accession: AB076403) for the templates, with primer′s design according to the conservative of Myostatin sequence. Dongbei wapiti Myostatin was amplified for the first time. The products of PCR were linked into pMD18T vector and then three exons were cloned. Myostatin code sequence was spliced according to 5′-GU-AG-3′ rules andhomologous matching. The Myostatin gene code sequence was composed of 1 128 bp (Dongbeiwapiti accession: EF629535) coding 375 amino acids. The results showed that thehomology analysis of the Myostatin in the evolution was highly conservative.The homology of Dongbei wapiti Myostatin amino acid sequence with pig was up to98%; the homology of Myostatin amino acid sequence was 85%—89% between birdsand mammals; the homology of Myostatin amino acid sequence was 60%—67% betweenfish and other animals. Myostatin code sequence could really attest to the evolution of distant species, as a better Phylogenetic mark.

Keywords: Dongbei wapiti Myostatin gene cloning homology analysis

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通讯作者:

作者简介: 巴恒星,男,硕士,助理研究员,主要从事野生动物保护与利用。

作者Email:

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