

研究报告

# 五龙鹅 *MHC Class I* 基因克隆及同源建模研究

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## 摘要

主要组织相容性复合体 (*MHC*) 与动物机体对外源性抗原的免疫应答之间存在关联。从GenBank/DDBJ/EMBL基因库中读取鸡、其他鸟类、爬行类和哺乳类的 *MHC Class I* 基因进行序列分析设计引物, 使用LA-PCR法从五龙鹅的基因组中克隆了 *MHC Class I* 基因序列 (DNA序列和mRNA序列GenBank登录号分别为: AM114925和AM114924), 并分析其基因组结构。运用生物信息学技术对测序结果进行分析显示: 基因组DNA由8个外显子和7个内含子组成, 与鸡基因序列同源率为60.8%~64.1%, 与人的同源率为42.9%。分子进化树进一步揭示了五龙鹅与鸡、其他鸟类、爬行类、哺乳类以及人类的进化关系, 同源建模分析发现该基因由氨基末端结构域和羧基末端结构域构成。

关键词 [MHC Class I](#) [五龙鹅](#) [基因组](#) [分子进化树](#) [氨基酸同源率](#) [同源建模](#)

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## Molecular Cloning and Homologous Modeling of Wulong Goose *MHC Class I* Gene

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### Abstract

<P>Major histocompatibility complex (<EM>MHC</EM>) was correlated with immune response for extra-antigen. <EM>MHC</EM> sequences of chicken, other birds, crawl species and mammalian were derived from GenBank/DDBJ/EMBL and analyzed by alignment, and then primers were designed. By means of LA-PCR method, <EM>MHC Class</EM> I gene was cloned from Wulong goose genomic DNA and total RNA, and the structure of <EM>MHC Class</EM> I genomic DNA was analyzed using bioinformation methods. The results showed that the genomic DNA, which consisted of 8 exons and 7 introns, had 64.1% amino acids homologous to chicken and 42.9% amino acids to human. The molecular phylogenetic tree further revealed evolutionary relationship between Wulong goose and other animals such as chicken, other birds, crawl species, mammalian and human. The results of homologous modeling showed that Wulong Goose <EM>MHC Class</EM> I gene was formed by amidocyanogen (N) terminal structure region and carboxyl (C) terminal structure region.</P>

**Key words** [MHC Class I](#) [Wulong goose](#) [genome](#) [molecular phylogenetic tree](#) [amino acids](#) [homologous rate](#) [homologous modeling](#)

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