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专论与综述

TYR基因外显子1的序列变异

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摘要 为了分析家猪与野猪的遗传多样性及起源，测定了来自 1 2 个中国地方家猪品种、 3 个欧洲引进猪品种以及8个中国野猪和2个越南野猪共36个个体的酪氨酸酶基因（TYR）外显子1的序列，共检出 6 个单核苷酸多态性位点（SNPs），且这6个位点的变异均为同义突变，根据这些变异可将酪氨酸酶基因DNA序列归结为 4 种单倍型。结合已发表的数据，构建了简约中介网络图。 在网络图中，单倍型TYR*2主要为欧洲家猪与欧洲野猪和三条亚洲家猪染色体。大部分亚洲家猪和野猪共享单倍型TYR*1，表明这是一个亚洲类型的单倍型；同时也有部分欧洲家猪与野猪携带这一单倍型。 而单倍型TYR*3和TYR*4为本研究检测到的稀有单倍型，这两种单倍型主要由中国家猪与亚洲野猪组成。这种网络图结构支持家猪的欧洲和亚洲独立起源学说，同时也表明相当部分的欧洲家猪品种受到亚洲猪的基因渗透，而少量中国家猪和日本野猪也受到了欧洲猪的基因渗透。

关键词 猪； TYR外显子1； 起源； 基因渗透

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Sequence Variation of TYR Exon 1 and Origin of Pigs

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Abstract

To investigate the origin and genetic diversity of domestic pigs, the porcine TYR exon 1 in 36 individuals from 12 Chinese indigenous breeds, three European breeds, eight Chinese wild boars and two Vietnamese wild boars was sequenced. Sequence analysis revealed six synonymous mutations, and all the sequences could be sorted into 4 haplotypes. Combining with the published sequences, we constructed a reduced median network (RM network), in which TYR*2 was a haplotype dominated by European domestic pigs and wild boars, plus only three chromosomes from Asian pigs. Most Asian domestic pigs and wild boars shared haplotype TYR*1，demonstrating that TYR*1 was an Asian specific haplotype. Meanwhile, some European domestic pigs and wild boars carried the haplotype TYR*1. TYR*3 and TYR*4 were two haplotypes with low frequencies, containing mainly Chinese indigenous pigs and Asian wild boars, plus some European domestic pigs. Independent domestication of pigs from Asia and Europe was supported by the pattern of RM network. The European commercial breeds had been suffered from introgression from Chinese pigs, and a few Chinese indigenous breeds and Japanese wild boars were also suffered from introgression from European pigs as well.

Key words pig TYR exon 1 origin introgression

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