

动物遗传学

绵羊线粒体DNA D-loop区串联重复序列变异研究

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摘要

对来自69个我国地方绵羊品种和8个国外引入品种共计77个个体线粒体DNA控制区长度为75 bp的串联重复序列进行了测序分析。在309个重复序列中检测到28个变异位点, 其中7个为具有2个变异体的单现突变, 1个为具有3个变异体的单现突变, 20个为具有2个变异体的简约位点。由28个变异位点中归纳出63个单倍型, 其中单倍型I和单倍型III具有较高的比例, 分别为12.94%和30.42%。研究结果揭示我国地方绵羊可能起源于两个母系祖先。哈萨克羊和阿勒泰羊间以及蒙古羊和乌珠穆沁羊间分别具有较近的亲缘关系且没有明显的遗传分化。藏绵羊、蒙古羊和乌珠穆沁羊相对哈萨克羊和阿勒泰羊而言具有较低的遗传多样性。

关键词 [绵羊](#); [线粒体DNA D-loop](#); [串联重复序列](#); [变异](#)

分类号

Study on Tandem Repeat Sequence Variation in Sheep mtDNA D-loop Region

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Abstract

<P>The 75-nt-long tandem repeat sequence in the control region of mtDNA of 77 individuals, of which 69 were from different indigenous sheep breeds in China and 8 were from imported breeds, was sequenced and analyzed to investigate the origin and differentiation of Chinese indigenous sheep breeds and also the genetic diversities and relationships among them. A total of 28 variable sites were detected within 309 repeated sequences, among which 7 sites were singleton variable sites with two variants, 1 site was a singleton variable site with three variants, and 20 sites were parsimony informative sites with two variants. A total of 63 haplotypes were sorted from 28 polymorphic sites, among which two main and basic haplotypes, namely, Hap 1 and Hap 3 were present at a much higher proportion, at 12.94% and 30.42%, respectively. It could be inferred that Chinese indigenous sheep breeds originated from two maternal ancestors because of the maternal inheritance characteristics of the mtDNA. Altay sheep and Kazakstan sheep are closely related and do not differentiate significantly. Mongolian sheep and Ujumuqin sheep also share a close relationship. Tibetan sheep, Mongolian sheep, and Ujumuqin sheep have lower genetic diversity than Altay sheep and Kazakstan sheep.</P>

Key words [sheep](#) [mtDNA D-loop](#) [tandem repeat sequence](#) [variation](#)

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