

绵羊皮肤源EST-SSR标记的功能注释及染色体电子定位

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摘要 为了深入研究绵羊皮肤源EST-SSR分子标记的潜在基因功能, 文章采用比较基因组学和生物信息学方法对本实验室前期开发的9个绵羊皮肤源EST-SSR多态位点原始EST进行了功能注释和电子定位。研究结果表明, 6个位点的原始EST与已知基因高度同源, 其中3个基因可能对毛性状具有重要调控作用。通过与牛全基因组cDNA文库的比对, 将8个位点初步定位于牛染色体上, 并基于牛、绵羊已定位的共用标记计算了染色体间相似系数, 分析构建了牛羊染色体NJ聚类图, 以此为参考最终将绵羊皮肤源EST-SSR标记电子定位于绵羊染色体上。研究结果不仅可为后期标记的连锁定位及毛性状关键基因的电子克隆提供参考, 同时有助于动物染色体的进化研究。

关键词: 绵羊 牛 EST-SSR 电子定位 染色体

Abstract: In order to study the potential gene function of ovine EST-SSR markers, nine original EST of Ovine Skin Derived polymorphic EST-SSR loci, which were developed in an early study by our lab, were ontology annotated and Electro localized. The results revealed that the original ESTs of the six loci had high homology with known genes and three of them probably played an important role in wool traits. Compared with its cDNA library, 8 loci were located on chromosomes of cattle. The homology of chromosomes between cattle and sheep was estimated based on the similarity coefficients calculated by positioning markers. Additionally, NJ clustering tree was established to serve for electro localization of ovine EST-SSR markers. Finally, 8 EST-SSR markers were successfully positioned on ovine chromosomes. The results from this study not only provide references for further studies on genetic mapping, in silico cloning of key genes for wool traits, but also are helpful to the researches of chromosome evolution in animal.

Keywords: sheep, cow, EST-SSR, electro localization, chromosome

收稿日期: 2010-12-23; 出版日期: 2011-07-25

基金资助:

科技部国际科技合作项目(编号: DF2007DFB30420)和石河子大学研究生创新基金项目(编号: YJCX2010-Y01)资助

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引用本文:

王遵宝, 赵宗胜, 余鹏, 吴洪宾, 班谦, 梁耀伟, 郑炜. 绵羊皮肤源EST-SSR标记的功能注释及染色体电子定位. 遗传, 2011, 33(7): 731-737.

WANG Zun-Bao, DIAO Zong-Qing, TU Feng, TUN Hong-Bin, BAN Qian, LIANG Yao-Wei, ZHENG Wei. The gene ontology and electro localization of ovine skin derived EST-SSR markers. HEREDITAS, 2011, V33(7): 731-737.

链接本文:

http://www.chinagene.cn/Jwk_yc/CN/10.3724/SP.J.1005.2011.00731 或 http://www.chinagene.cn/Jwk_yc/CN/Y2011/V33/I7/731

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