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应用荧光原位杂交(FISH)技术研究黑叶猴染色体易位 A Study of Chromosome Translocation of Francois Monkey by Fluoresence in situ Hybridization (FISH)

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摘要 本文应用染色体荧光原位杂交(FISH)技术, 利用人9号和14号染色体特异探针, 对深低温冻存和长期传代的黑叶猴细胞株染色体畸变进行了分析。确定在长期冻存和传代过程中, 一些黑叶猴细胞在No. 12和No. 17染色体之间发生了易位, 一条 No. 17染色体发生断裂, 断裂点在17q13, 断裂片段17q13-17qter易位到一条 No. 12染色体长臂末端, 形成一条小的中着丝粒的和一条具较长长臂的衍生染色体即 der(17) 和 der(12)。结果表明, 荧光原位杂交技术用人染色体特异探针不仅能检测出人类染色体畸变, 也能有效地检测灵长类动物染色体畸变。

Abstract In this paper, the chromosome aberration of long-term cryopreserved and subcultured Francois' monkey (Semnopithecus francoisi) cell line(KCB 92008) was analyzed by fluoresence in situ hybridizaton (FISH) using human 9 and 14 chromosome DNA probes. After compared the hybridization pattern with the G-banding pattern on the same metaphase, a translocation between Nos. 12 and 17 chromosomes was identified. In some Francois' monkey cells, one of chromosome No. 17 was broken into two at the breakpoint 17q13, the segment(17q13-17qter) without centromere transfered to the long arm terminal of one chromosome No. 12. Thus, two derivant chromosomes der(12) and der(17) were formed, the long arm of der(12) was longer than the normal partner, while the long arm of der(17) was shorter than the normal one. The result indicated that the technique of FISH using human whole chromosome probes was not only a powerful tool to detect human chromosome rearrangements, but also a usefulmethod to study the primate chromosome aberration.

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