

## 猕猴、白眉长臂猿、人类染色体普通型脆性部位和G-带的比较研究

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**摘要** 以BrdU、FdU、MTX诱导猕猴、白眉长臂猿和人类染色体普通型脆性部位的表达,并对染色体脆性部位和染色体进化的关系以及三种灵长类染色体的同源性进行了比较分析。结果表明,近缘动物染色体同源区内的脆性部位在进化上是保守的,可作为染色体具有共同起源的标志,结合G-带的比较,可以用以阐明近缘动物染色体的同源性和染色体进化。

**关键词** [脆性部位,灵长类,染色体G-带带纹,染色体进化](#)

分类号

## Comparison of the Common Fragile Sites and G-banding Patterns of Chromosomes among Rhesus Monkeys, White-browed Gibbons and Human Being

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### Abstract

The peripheral lymphocyte cultures from Rhesus monkey (Macaca mulatta), White-browed gibbons (Hylobates hoolock) and human being were treated with BrdU (bromodeoxyuridine), FdU (fluorodeoxyuridine) and MTX (methotrexate). A number of 22 common fragile sites for Rhesus monkey and 20 for white-browed gibbons were found. Chromosome homology and the relationship between fragile sites and chromosomal evolution were discussed. Several common fragile sites of human chromosomes have been found at the homologous chromosomal regions in Rhesus monkey as well as in White-browed gibbons. Furthermore, the fragile sites at 1q14, 1p32 of Rhesus monkey may correspond to the homologous fragile sites at 1p21, 1q31 of White-browed gibbons. All of these fragile sites at the homologous regions of chromosomes are evolutionarily conserved and may be the indicators of common origin of chromosomes as genetic markers. Combined with G-banding patterns of chromosomes, the conservative fragile sites at homologous regions of chromosomes may be useful for the study of chromosome homology and evolution in closely-related animals. Our results show that the differences of chromosome 1 between Rhesus monkey and human may involve a pericentric inversion and a paracentric inversion. However, the differences of chromosome 1 between Rhesus monkey and White-browed gibbons may concern a pericentric inversion, a paracentric inversion, and a deletion or a translocation. The main differences of chromosome 3 between Rhesus monkey and human may involve a pericentric inversion. Our results indicate that the differences of chromosome 7 between White-browed gibbons and human may involve a paracentric inversion. Also, our results show that chromosome 7 of White-browed gibbons or human may represent the common ancestral chromosome of the higher primates (Hominoidea).

**Key words** [Fragile sites](#) [Primates](#) [G-banding patterns of chromosomes](#) [Chromosomal evolution](#)

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