

## **Chromosomal Analyses of Leiomyoma from the Nonhuman Primates: The Chimpanzee and Macaque**

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**Introduction:** Recent studies suggest that chromosomal abnormalities may contribute towards the etiology and maintenance of leiomyoma in the human. Forty percent of human fibroids examined show abnormal chromosomal patterns. The main cytogenetic aberrations seen involve chromosomes 6, 7, 12, and 14 ( Ligon, A.H. and Morton, C. M., Genes, Chromosomes and Cancer, 2000, 28:235-245 ).

**Hypothesis:** Chromosomal abnormalities may be present in nonhuman primate leiomyoma and that these will be similar to those found in human tissues.

**Objective:** To analyze the karyotype of leiomyoma in the nonhuman primate the chimpanzee (*Pan troglodytes*) and the macaque (*Macaca fascicularis*).

**Methods:** Four samples of leiomyoma tissue, two from two chimpanzees and two from two macaques were cultured in RPMI 1640 growth medium supplemented with 10% fetal bovine serum and antibiotics following dissociation with collagenase. Cells were monitored daily for mitotic activity. Cells for karyotyping were obtained after 6-7 days of culture following growth arrest with colcemid. Chromosomes in 20 cells were G-banded and karyotyped according to size.

**Results:** The leiomyoma from the chimpanzees displayed a normal karyotype of 48,XX. One macaque leiomyoma showed a normal karyotype of 42,XX and the second leiomyoma showed a mosaic pattern of 42,XX/43,XX,+6/43,XX+12/43,XX+iso(17).

**Conclusion:** The karyotype of the leiomyoma from the chimpanzee samples show a normal pattern however one macaque sample displays an aberration suggesting that leiomyoma can form in the absence of chromosomal defects in the chimpanzee and the macaque, as in the human. Chromosomes 6 and 12 are also affected in human fibroids. The abnormal chromosomal pattern involving similar chromosomes in the human and macaque suggests that these may be involved in the etiology or maintenance of leiomyoma. Further investigation is warranted.