

Genetic mechanism and property of a whole-arm translocation (WAT) between chromosomes 8 and 9 of agile gibbons (*Hylobates agilis*).

Hirai H, Mootnick AR, Takenaka O, Suryobroto B, Mouri T, Kamanaka Y, Katoh A, Kimura N, Katoh A, Maeda N.

Primate Research Institute, Kyoto University, Inuyama, Aichi 484-8506, Japan.
hirai@pri.kyoto-u.ac.jp

C-banding analysis with 47 gibbons of the subgenus *Hylobates* (*Hylobates*) (44-chromosome gibbons) uncovered that the gibbons had a characteristic complicated C-banding pattern. The C-band pattern also revealed that a whole-arm translocation (WAT) between chromosomes 8 and 9 existed only in the species *H. agilis* (agile gibbon). Comprehensive consideration allows postulation that the translocation seemed to be restricted to two subspecies: *H. agilis agilis* (mountain agile gibbon) and *H. agilis unko* (lowland agile gibbon), found in Sumatra and part of the Malay Peninsula. Moreover, combined intensive analyses of C-banding and chromosome painting provided strong evidence for a plausible evolutionary pathway of chromosome differentiation of chromosomes 8 and 9. The C-banded morph 8M(t/c) seemed to be the primary type of chromosome 8 in the subgenus and to have altered into the three morphs through three pericentric inversions. The newest morph (8A(M/ci)) produced by the third inversion exchanged the long arm for chromosome 9, and subsequently constructed the WAT morphs of 8/9A(Mc/ct) and 9/8M(i/ci).

PMID: 12675304 [PubMed - in process]