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Comparative chromosome painting between the domestic pig (*Sus scrofa*) and two species of peccary, the collared peccary (*Tayassu tajacu*) and the white-lipped peccary (*T. pecari*): a phylogenetic perspective

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## **Abstract -**

The Suidae and the Dicotylidae (or Tayassuidae) are related mammalian families, both belonging to the artiodactyl suborder Suiformes, which diverged more than 37 million years ago. Cross-species chromosome painting was performed between the domestic pig (*Sus scrofa*;  $2n = 38$ ), a representative of the Suidae, and two species of the Dicotylidae: the collared peccary (*Tayassu tajacu*;  $2n = 30$ ) and the white-lipped peccary (*T. pecari*;  $2n = 26$ ). G-banded metaphase chromosomes of the two peccaries were hybridized with whole chromosome painting probes derived from domestic pig chromosomes 1?18 and X. For both peccary species, a total of 31 autosomal segments that are conserved between pig and peccary could be identified. The painting results confirm conclusions inferred from G-band analyses that the karyotypes of the collared peccary and the white-lipped peccary are largely different. The karyotypic heterogeneity of the Dicotylidae contrasts with the relative homogeneity among the karyotypes of the Suidae. For this difference between the Dicotylidae and the Suidae, a number of explanations are being postulated: 1) the extant peccaries are phylogenetically less closely related than is usually assumed; 2) the peccary genome is less stable than the genome of the pigs; and 3) special (e.g. biogeographical or biosocial) circumstances have facilitated the fixation of chromosome rearrangements in ancestral dicotylid populations.

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