firms these data. *APOB* and *LHCGR*, which map in human to the distal part of HSA2p [7], in pig map to distal SSC 3q24-qter and 3q22-q23 [8] respectively. IL1A and IL1B, which map in human to the proximal long arm in 2q12-q21 [7], map to proximal SSC 3q11-q14 [8]. LCT maps in human to 2q21 [7] but is found in pig on SSC 15 [9], as is the case for other loci from distal HSA2q. These localizations provide evidence that in pig the human Chr 2 is conserved in two segments which are identical to chimp Chr PTR 12 and PTR 13. During evolution to human, these two ancestral chromosome arms are fused and form HSA 2 [10].

Acknowledgments: This work was supported by the Deutsche Forschungsgemeinschaft and is associated with the PiGMaP project within the EC's BIOTECH+ program.

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Assignment of the choline acetyltransferase gene to porcine Chromosome 14q25-27 by fluorescence in situ hybridization

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Received: 15 November 1995 / Accepted: 13 December 1995

Species: Pig (*Sus scrofa domestica*)
Locus name: Choline acetyltransferase
Locus symbol: *ChAT*
Map position: 14q25-27 (Fig. 1)
Method of mapping: Fluorescence in situ hybridization (FISH)
Molecular reagents: A cosmid clone containing a 35-kb insert of porcine genomic DNA, including at least a part of *ChAT* gene, was used as a probe for FISH.
Previously identified homologs: *ChAT* gene was assigned to human Chromosome (Chr) 10q11-q22.2 by in situ hybridization [1,2].
Discussion: ChAT catalyzes the biosynthesis of the neurotransmitter acetylcholine in the central and peripheral nervous system [3]. Here, we report mapping of the gene encoding *ChAT* to porcine Chr 14. Several other genes, which have been assigned to the same chromosome, include ubiquitin C (UBC; 14q12-15) [4], D-amino acid oxylase (DAO; 14q21-23) [5], cardiac ryanodine receptor (RYR2; 14q22-23) [6], 5S rRNA (14q23) [7], and urokinase (PLAU; 14q24-26) [5]. All of the corresponding genes, including ChAT, in humans have already been assigned: UBC and DAO are mapped to Chr 12, RYR2 and 5S rRNA to Chr 1, and ChAT and PLAU to Chr 10 [8]. This means that the porcine Chr 14 contains at least three different conserved regions: the upper part of the porcine Chr 14 is homologous to human Chr 12, the middle part to Chr 1, and the lower part to Chr 10. This will provide useful information for considering a chromosomal rearrangement during the evolutionary process of the porcine genome.

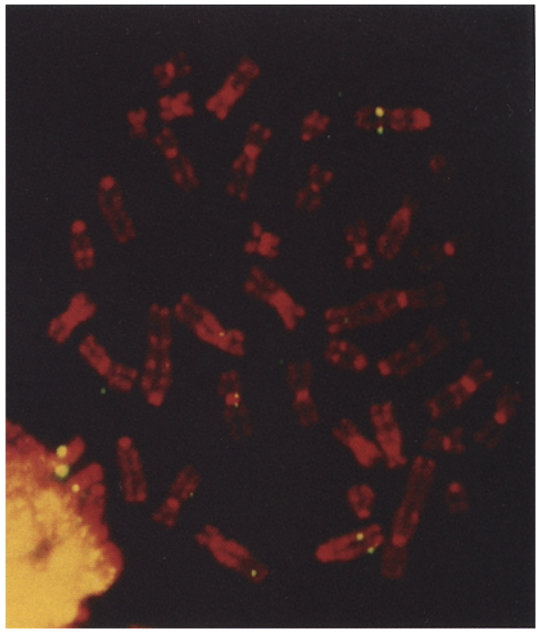

Fig. 1. Assignment of the porcine choline acetyltransferase gene to Chr 14q25-27 by fluorescence in situ hybridization. A representative chromosome-spread displaying fluorescence signals; hybridization sites are indicated by arrows.

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Acknowledgments: This work is funded by the Ministry of Agriculture, Forestry and Fisheries of Japan and the Japan Racing Association (JRA).

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