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## **Abstract**

Source and Description of Primers. Dog primers designed from human sequence (Venta et al., 1996) were used to amplify a 774-bp fragment of the porcine IL6 gene. The 5¢ primer is located in exon 3, and the 3¢ primer is located in exon 4.

## **Keywords**

Pigs, Interleukin 6 Gene

## **Disciplines**

Agriculture | Animal Sciences | Genetics and Genomics

## **Comments**

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# Rapid Communication: Linkage Mapping of Porcine Interleukin 6 (IL6)<sup>1</sup>

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**Source and Description of Primers.** Dog primers designed from human sequence (Venta et al., 1996) were used to amplify a 774-bp fragment of the porcine *IL6* gene. The 5' primer is located in exon 3, and the 3' primer is located in exon 4.

**Primer Sequences.** Forward primer: 5' GCA CTG GCA GAA AAC AAC CT 3' (GenBank accession no. L77434); reverse primer: 5' ATC TGA AAC TCC ACA AGA CC 3' (GenBank accession no. L77435).

**Method of Detection.** A PCR amplification (25  $\mu$ L final volume) was performed using 25 ng of genomic porcine DNA, 1 $\times$  PCR buffer (Promega), 1.5 mM MgCl<sub>2</sub>, 200  $\mu$ M each dNTP, .2  $\mu$ M each primer, and .6 U *Taq* polymerase (Promega). The thermocycler profile was 93°C for 3 min; 35 cycles of 94° for 45 s, 55° for 1 min, and 72° for 1 min; followed by a final extension at 72° for 5 min. Five microliters of the 744-bp product was digested with *MspI* and separated on a 2% agarose gel.

**Description of Polymorphism.** The *MspI* digestion of the *IL6* fragment produced a 774-bp band (no cut site), a 674-bp band, and a 100-bp band. The 774-bp fragment was designated as the A allele. The presence of the 674-bp and 100-bp fragments was designated as the B allele (Figure 1).

**Inheritance Pattern.** A Mendelian inheritance pattern was observed for the *IL6 MspI* polymorphism in five three-generation families of the PiGMap reference families (Archibald et al., 1995).

**Frequency.** Frequencies for the A allele were .95 for Meishan (n = 11), .15 for Large White (n = 10), 0 for Wild Boar (n = 2), 0 for Chester White (n = 9), .20 for Duroc (n = 20), .32 for Hampshire (n = 11), .08 for Landrace (n = 6), and .18 for Yorkshire (n = 11).

**Chromosomal Location.** Previous physical mapping has placed *IL6* on porcine chromosome 9 (Rettenberger et al., 1996). This was confirmed by linkage analysis with significant linkages (LOD and recombination in parentheses) to *S0095* (6.65, .16), *S0019* (20.40, .02), *MYOG* (4.00, .15), *S0295* (10.05, .11), and *S0119* (8.54, .11). These markers are on the published PiGMap chromosome 9 map. The *IL6* locus was most tightly linked to *S0019* and likely falls between *S0019* and *S0119*.

**Comments.** The pig PCR product was sequenced to confirm the product was *IL6*. The coding sequence was 100% similar to available pig mRNA (GenBank accession no. M80258).

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**Key Words:** Pigs, Interleukin 6 Gene

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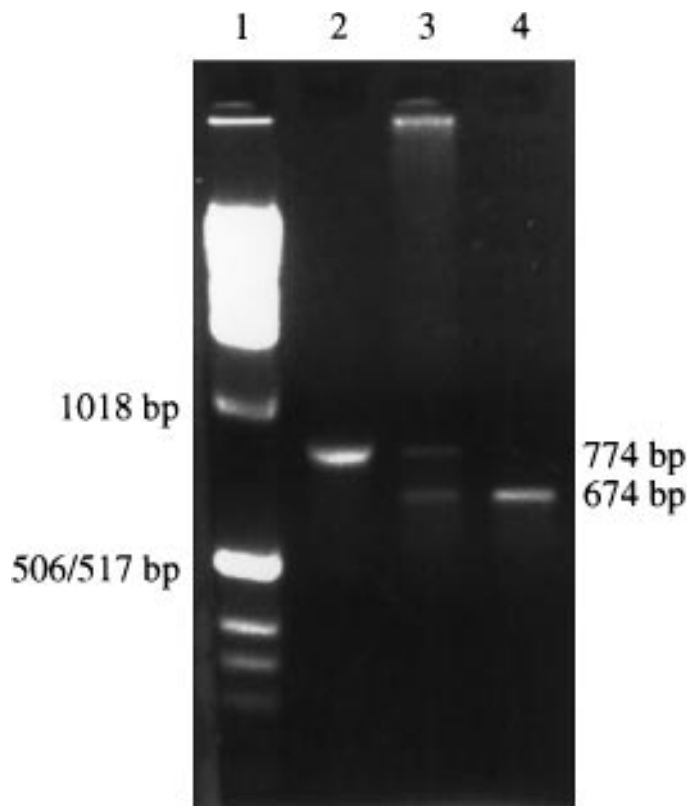


Figure 1. Two alleles representing three genotypes. Lane 1: 1-kb ladder; lane 2: AA genotype, lane 3: AB genotype; lane 4: BB genotype. The margins indicate allele sizes in base pairs.

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