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# Rapid Communication: *MspI* Restriction Fragment Length Polymorphism at the Swine *MYF6* Locus<sup>1,2</sup>

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**Source and Description of Probe.** A 1,296-bp rat cDNA clone for *MRF4* (also called *MYF6*) was excised from the *EcoRI* site of the plasmid pBluescript KS<sup>+</sup> (Rhodes and Konieczny, 1989).

**Method of Detection.** DNA was isolated from whole blood and digested with *MspI*. Fragments were then separated by agarose gel electrophoresis and transferred to charged nylon membranes. Hybridizations were at 65°C for 16 to 20 h (.5 M NaCl, .05 M Naphosphate buffer, pH 6.5, 5× Denhardt's reagent, 10% dextran sulfate, .5% SDS, 100 µg/mL sonicated, denatured salmon sperm DNA). Final washes were at 55 to 60°C in .7× SSC, .5% SDS for 15 to 20 min.

**Description of Polymorphism.** Hybridization with the rat *MRF4* probe revealed three swine fragments. The 6.3- and 4.6-kb fragments were polymorphic (Figure 1) and the 2.3-kb fragment was monomorphic (not shown). No polymorphisms were detected for swine *MYF6* in unrelated pigs using *TaqI* (34 pigs), *SacI* (28 pigs), or *XbaI* (23 pigs).

**Inheritance Pattern.** Autosomal Mendelian segregation of the 6.3- and 4.6-kb swine *MYF6* fragments was observed in 165 pigs from six, two- and three-generation families.

**Frequency.** Frequencies in 69 unrelated pigs were .92 (6.3-kb allele) and .08 (4.6-kb allele) (Table 1).

**Chromosomal Location.** Unknown.

**Comments.** *MYF6* is a skeletal muscle-specific transcription factor from the family that also includes MyoD (*myf-3*), myogenin, and *myf-5*. It has been reported in the rat as *MRF4* (Rhodes and Konieczny, 1989) and in the human as *myf-6* (Braun et al., 1990). *MYF6* seems to be the last of these genes to be expressed, and it is the predominant factor in postnatal muscle.

## Literature Cited

Braun, T., E. Bober, B. Winter, N. Rosenthal, and H. H. Arnold. 1990. Myf-6, a new member of the human gene family of myogenic determination factors: Evidence for a gene cluster on chromosome 12. *EMBO J.* 9:821.

Rhodes, S. J., and S. F. Konieczny. 1989. Identification of *MRF4*: A new member of the muscle regulatory factor gene family. *Genes Dev.* 3:2050.

Key Words: Pigs, Muscle, *MYF6*, *MRF4*, RFLP

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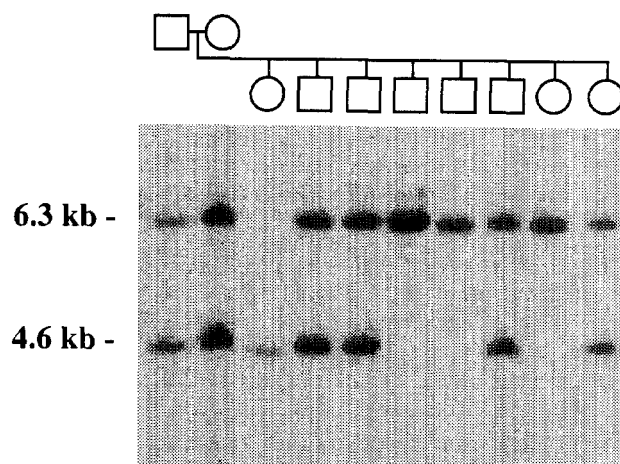


Figure 1. Mendelian segregation of porcine *MYF6* *MspI* fragments in a two-generation crossbred family of Meishan × Duroc pigs. Square denotes male; circle denotes female.

Table 1. Frequency of *MYF6* genotypes

Breed	n	Frequency of pigs with indicated genotype <sup>a</sup>		
		6.3/6.3	6.3/4.6	4.6/4.6
Fengjing	6	67	17	17
Meishan	8	63	25	12
Minzhu	4	50	50	0
Chester White	9	78	22	0
Other breeds <sup>b</sup>	42	100	0	0

<sup>a</sup>6.3 = 6.3-kb *MspI* fragment; 4.6 = 4.6-kb *MspI* fragment.

<sup>b</sup>Landrace, Yorkshire, Duroc, Hampshire, and Poland China.

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