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C. W. Ernst
The Ohio State University

D. A. Vaske
Iowa State University

R. G. Larson
Iowa State University

M. E. White
The Ohio State University

Max F. Rothschild
Iowa State University, mfrothsc@iastate.edu

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Abstract

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+ (Rhodes and Konieczny, 1989)

Keywords

Pigs, Muscle, MYF'6, MRF4, RFLP

Disciplines

Agriculture | Animal Sciences | Genetics and Genomics

Comments

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Rapid Communication: *Msp*I Restriction Fragment Length Polymorphism at the Swine *MYF6* Locus[1,2]

C. W. Ernst*,[3], D. A. Vaske†, R. G. Larson†, M. E. White*,[4], and M. F. Rothschild†

*Department of Animal Science, The Ohio State University, Columbus 43210-1095 and †Department of Animal Science, Iowa State University, Ames 50011-3135

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

Method of Detection. DNA was isolated from whole blood and digested with *Msp*I. 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* Na-phosphate 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 *Taq*I (34 pigs), *Sac*I (28 pigs), or *Xba*I (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.

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[3]To whom correspondence should be addressed.

[4]Present address: Dept. of Anim. Sci., Univ. of Minnesota, St. Paul 55108.

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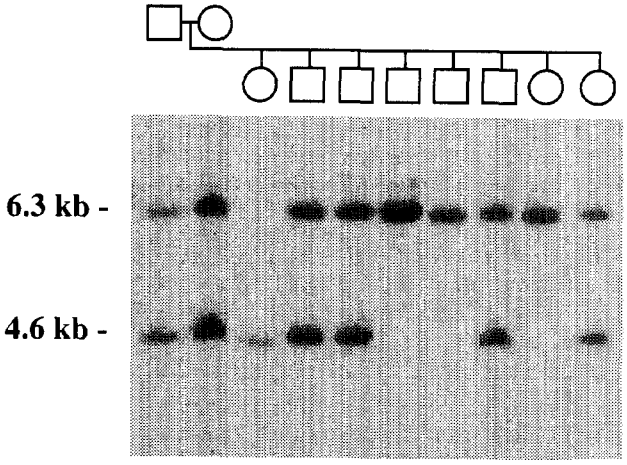

Figure 1. Mendelian segregation of porcine *MYF6* *Msp*I fragments in a two-generation crossbred family of Meishan × Duroc pigs. Square denotes male; circle denotes female.

Table 1. Frequency of *MYF6* genotypes

Breed	n	Frequency of pigs with indicated genotype[a]		
		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[b]	42	100	0	0

[a]6.3 = 6.3-kb *Msp*I fragment; 4.6 = 4.6-kb *Msp*I fragment.
[b]Landrace, Yorkshire, Duroc, Hampshire, and Poland China.