The porcine PHIcDNA linked to the halothane gene detects a HindIII and XbaI RFLP in normal and malignant hyperthermia susceptible pigs

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Source/description: 1.1 kb BamHI/Dral-fragment was isolated from a 2.0 kb EcoRI-fragment of the porcine phosphohexose-isomerase (PHI) cDNA derived from a λgt11 (Stratagene) porcine skeletal muscle cDNA library and subcloned in pBS (Bluescribe, Stratagene) (Chaput et al., 1988).

Polymorphisms: HindIII detects a two allele polymorphism with bands at 3.3 kb (A1) and 3.1 kb (A2). Constant bands at 0.5 kb, 4.9 kb, 5.1 kb, 18 kb, and 20 kb.
XbaI detects a two allele polymorphism with bands at 3.7 kb (B1) and 3.5 kb (B2). Constant bands at 5.1 kb and 20 kb.

Frequency: Studied in 90 pigs (88 German Landrace, 2 Pietrain).
HindIII A1:0.69 XbaI B1:0.69
A2:0.31 B2:0.31

Not polymorphic for: TaqI, PvuII, SacI, EcoRI.

Chromosomal localisation: The PHI-gene has been mapped to chromosome 6p12-q22 by in situ hybridization to metaphase spreads (Davies et al., 1988).

Mendelian inheritance: Co-dominant segregation was demonstrated in 10 halothane-tested families.

Probe availability: Requests for probe to Arsène Burny, Faculte des Sciences Agronomiques de L'Etat, 5800 Gembloux, Belgium.

Acknowledgements: The authors want to thank Arsène Burny for the kind gift of the porcine PHIcDNA-probe. Appreciation is extended to H.Domdey, M.Schartl, and E.-L.Winnacker for providing excellent working conditions.


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Polymorphisms: NotI detects a two allele polymorphism with bands at either 270 kb (A1) or 230 kb (A2).

Frequency: Studied in 15 pigs (German Landrace).
A1:0.46 A2:0.54

Not polymorphic for: SfiI, BshHII, and SacII.

Chromosomal localisation: The PHI-gene has been mapped to chromosome 6p12-q22 by in situ hybridization to metaphase spreads (Davies et al., 1988).

Mendelian inheritance: Co-dominant segregation was demonstrated in 10 halothane-tested families.

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