Genotyping PCR for a hairless strain, HR (nbio003)

Zygosities of *Hr* alleles can be determined by PCR using three primers (S607, S776, and R850) simultaneously. If only 275-bp amplicons were produced, the mice were taken to be homozygous (*hr*/*hr*). If only 244-bp amplicons were produced, the mice were wild-type (+/+). If both amplicons were produced, the mice were heterozygous (+/*hr*).

Primer set:

1) S607: TCTGGAACCAGAGTGACAGACAGCTA

2) S776: GGTCTCGCTGGTCCTTGA

3) R850: TGGGCCACCATGGCCAGATTTAACACA

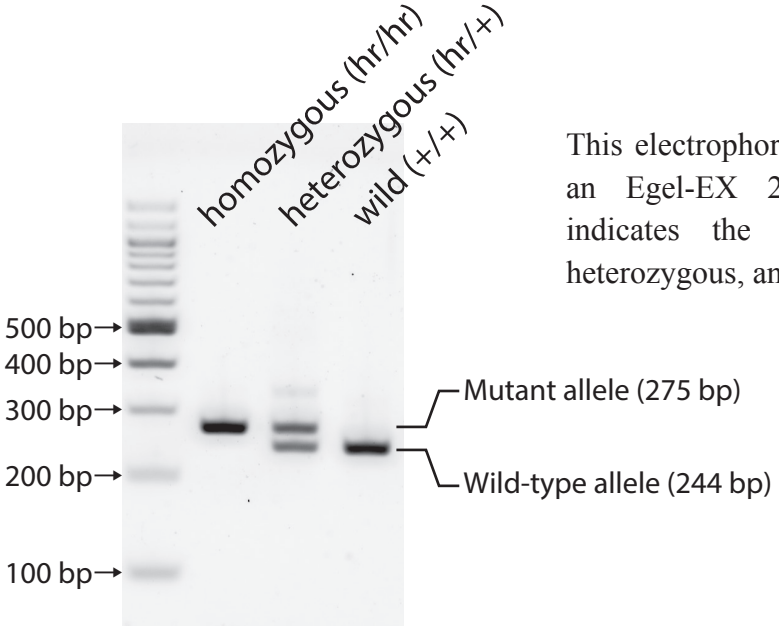
Thermal conditions for PCR using HotStarTaq DNA polymerase Master Mix* (Qiagen):

(94˚C - 15 min) x 1

(95˚C - 30 sec, 60˚C - 30 sec, 72˚C - 30sec) x 40

(72˚C - 5 min) x 1

4˚C - ∞



This electrophoregram of PCR products using an Egel-EX 2% gel (Life technologies) indicates the zygosities of homozygous, heterozygous, and wild-type HR mice.

*The enzyme is a chemically modified Taq polymerase for hot start PCR and needs 15-min incubation at 95 °C for activation. Master Mix contains enzyme, dNTP, Mg, etc. at 2 x concentration. Please see Qiagen's website for details (http://www1.qiagen.com/Products/Pcr/HotStarTaqSystem/HotStarTaqMasterMix.aspx).

Reference

Suzuki O, Koura M, Noguchi Y, Uchio-Yamada K, and Matsuda J (2013) Zygosity determination of hairless mice by PCR based on Hr^{hr} gene analysis. *Exp. Anim.* 62:267-273. (PMID: 23903062)