

Meat species identification and Halal authentication analysis using mitochondrial DNA.

ABSTRACT

A method utilizing PCR-restriction fragment length polymorphism (RFLP) in the mitochondrial genes was developed for beef (*Bos taurus*), pork (*Sus scrofa*), buffalo (*Bubalus bubali*), quail (*Coturnix coturnix*), chicken (*Gallus gallus*), goat (*Capra hircus*), rabbit (*Oryctolagus cuniculus*) species identification and Halal authentication. PCR products of 359-bp were successfully obtained from the cyt b gene of these six meats. AluI, BsaJI, RsaI, MseI, and BstUI enzymes were identified as potential restriction endonucleases to differentiate the meats. The genetic differences within the cyt b gene among the meat were successfully confirmed by PCR-RFLP. A reliable typing scheme of species which revealed the genetic differences among the species was developed.

Keyword: Cyt b gene; Mitochondrial DNA; Halal authentication; Forensic science; Meat; PCR-restriction fragment length polymorphism (RFLP); Species identification.