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Ubiquitin Primer Chip for Identification and Discrimination of Genetic Materials

Abdulaziz Ali A. Al-Khedhairy

*Department of Zoology, College of Science, King Saud University, P.O. Box - 2455, Riyadh 11451, Saudi Arabia,
E-mail: kedhairy@ksu.edu.sa. Tel: 966 1 4675765 Fax: 966 1 4678514*

Abstract. Polyubiquitin genes encode highly conserved polyproteins being characterized by the presence of genomic DNA tandem repeats of 228 bp that each encodes a monomer called ubiquitin. Multiple polyubiquitin genes within a single genome are present in various organisms and distinguished by different number of ubiquitin DNA repeats (Wiborg, *et al.*, 1985; Arribas, *et al.*, 1986; Baker and Board, 1987; Giorda, and Ennis, 1987; Neno, *et al.*, 1994; Mezquita, *et al.*, 1997; Al-Khedhairy, 2004; Al-Khedhairy, 2005). A New ubiquitin primer chip (UPC) has been designed on the basis of homology of polyubiquitin genomic DNA sequences from a variety of species. The primer chip was utilized to discriminate the genomes of different species on the basis of polyubiquitin genomic DNA sequence repeats using polymerase chain reaction (PCR) and direct DNA separation on agarose gel electrophoresis. This provides a new and cheap method for the identification and discrimination of genetic materials derived from unknown living sources .

Keywords: Polyubiquitin, DNA Fingerprinting, Forensic DNA analysis.