D-27 The use of the human DNA probe 33.15 to detect genetic heterogeneity of the Sri Lankan elephant population

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The Sri Lankan elephant (*Elephas maximus maximus*), a sub species of the Asian elephant found only in Sri Lanka, is listed as an endangered species. Future survival is likely to depend on the success of breeding programme in captivity. Identification of genetic variants, an area yet to be explored in the elephant, is essential for such conservation programmes. DNA fingerprinting is a tool which has been used to determine the degree of genetic variation in a variety of other animal populations.

The present work describes a feasibility study on the use of the multilocus human DNA probe 33.15 on elephant DNA with the ultimate aim of using this probe to detect the degree of genetic variation in the Sri Lankan elephant.

DNA extracted from blood samples collected from captive elephants during Bellanwila and Nawam perahera seasons, were subjected to digestion with *Hinf I* and agarose gel electrophoresis. Southern blots (nylon) of gels were hybridized with ^{32}P oligolabelled 33.15 DNA probe. As elephant DNA has not been previously analyzed by DNA fingerprinting, this study was performed to determine the hybridization conditions.

Some of the parameters varied were the salt concentration, blocking agents, the amount of DNA, and the temperature. A discrete banding pattern (between 23 kb-2 kb) was obtained when elephant DNA (10 mcg) was hybridized at 61°C in 0.25M sodium phosphate pH 7.2, 7%SDS, 10mMEDTA, 1%BSA and 6% PEG with 200 ng of probe per 25 ml of buffer and filters washed in 3 x SSC, 0.1%SDS at 50° C. The detection of a banding pattern indicates that the human DNA probe 33.15 is appropriate for studies on population-genetic structure assessments of the Sri Lankan elephant.

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