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## Sex Identification Report

### Type of sample:-

- 1- Mummified bone (6x6 cm). The inner portion of the bone was used for DNA extraction
- 2- Mummified soft tissue (2x7 cm)

### History of the sample:-

Tissue samples are taken from mummy NO 61072 (unidentified) which was discovered in the tomb of Amenhotep II (KV35) at Luxor west bank.

### Type of test :

Sex identification by PCR

### Scientific background of the test:

The polymorphism of the human genome provides an excellent mean for discrimination between sexes at the DNA level. The development of the PCR (polymerase chain reaction) for amplifying specific DNA fragment (1,2) has greatly simplified the determination of sex. The value of PCR for analysis of ancient archaeological samples is that it allows the sex typing of partially degraded DNA samples. Specific primers were synthesized to amplify the centromeric alphoid repeat sequences from both X and Y chromosomes (3). In the present test we have used the following primers:

X3 5'-TATTTGGACTCTCTCTGAGGA-3'

X4 5'-TTCTACTACAAGGGTGTGCA-3'

Y3 5'-GTGTATTCACCTCCGGGAG-3'

Y4 5'-ACAAAAGGTTCAATTCTGTGAG-3'

The X primers amplify a 157 bp fragment and Y primers amplify a 106bp fragment



**Result:-**

The sex was determined to be male because both the the X specific and Y specific bands were clearly detected (Fig 1)

N.B: The Y chromosome is present in all the cells of a male individual, while it is absent in females.

**References:-**

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- 2-Saiki, R. K., Gelfand, D. H., Stoffel, S., Scharf, S. L., Higuchi, R., Horn, G. T., Mullis, K. B., and Erlich, H. A. (1988)"primer directed enzymatic amplification of DNA with thermo stable DNA polymerase " science, Vol. 239, , pp. 487-491
- 3-Witt, M. and Erickson, R. P. (1989)"A Rapid method for detection of Y-chromosomal DNA from dried blood specimens by the polymerase chain reaction" Human Genetics, Vol. 82, pp. 271-274
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