EFFICIENCY OF HUMAN DNA ISOLATION AND STR PROFILING FROM BURNT TEETH

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OBJECTIVES

Identification of a deceased individual is important from the viewpoint of the relatives, as it has a significant role in facilitating criminal investigations, levies and inheritance. Identification of a deceased individual is important from the viewpoint of the relatives, as it has a significant role in facilitating criminal investigations, levies and inheritance. Identification of a deceased individual is important from the viewpoint of the relatives, as it has a significant role in facilitating criminal investigations, levies and inheritance.

TIME ((minutes))

CROWN (FX)

remains.

exposure differs among them. In the studies developed on whole teeth and pulp bone will still yield authentic DNA signals. Although previous studies have used genetic analysis. The genetic approach is usually unproblematic in cases of fire duration of the fire. One of the approaches for identification of burned remains is the identification of human remains subjected to incineration depends on the degree of destruction of the remains, which is affected by the intensity and duration of the fire. One of the approaches for identification of burned remains is the identification of human remains subjected to incineration depends on the degree of destruction of the remains, which is affected by the intensity and duration of the fire. One of the approaches for identification of burned remains is the identification of human remains subjected to incineration depends on the degree of destruction of the remains, which is affected by the intensity and duration of the fire.

MATERIALS

- Sample preparations: Teeth were divided into seven groups treated at different temperatures: 100, 200, 300, 400, 500, 600 and 700°C. Each group was treated at these temperatures for 1 minute, 5 minutes, 15 minutes and 15 minutes, removing one tooth after each time period. Two natural teeth were used as controls.
- Teeth were macroscopically ground with gentle knife and pestle. DNA was extracted using Guaraná Blood and Tissue kit (Agencourt).
- STRs quantification was performed using Dye3, and the DNA was amplified using the following primer pairs: D7S820, D13S317, D5S818 and D16S539. The amplification reactions were performed in a total volume of 20 µl with 2 µl DNA, 10 µl SYBR Green Mix and 0.3 µM of each primer. The PCR conditions were developed in a Fast 384-Well Cycler 9700: 10 minutes at 95°C, followed by 35 cycles at 95°C for 45 s, 48°C for 45 s, 72°C for 1 minute, and 1 cycle at 72°C for 15 minutes. This indicates that even in high-temperature burnt teeth it is possible to amplify DNA, at least housekeeping DNA. However, a STR profile gene (like vWA, TH01 and TPOX, Fig 6) showed almost undetectable amplification from 200°C 15 min. In spite of these results with STRs, the amplification of D7S820, D13S317, D5S818 and D16S539 from 100°C 15 min.

RESULTS AND DISCUSSION

1. Microscopic changes

2. DNA quantification

3. STRs amplification

4. The findings from this research provide a quantitative study for the achievement of obtaining DNA profile from burnt teeth

REFERENCES