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Simple DNA Extraction of Urine Samples: Effects of Storage Temperature and Storage Time

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Highlights

- Fast and easy DNA extraction from urine using the Promega Maxwell 16 instrument
- DNA can be extracted from a small volume of 1.7 ml of urine sample
- Storage at 4°C or -20°C for 100 days had higher DNA yield than at room temperature
- Storage at 4°C or -20°C for 100 days had better typeability than at room temperature
- Storage at room temperature possibly led to DNA degradation

Abstract

Urine samples are commonly analysed in cases with suspected illicit drug consumption. In events of alleged sample mishandling, urine sample source identification may be necessary. A simple DNA extraction procedure suitable for STR typing of urine samples was established on the Promega Maxwell® 16 paramagnetic silica bead platform. A small sample volume of 1.7mL was used. Samples were stored at room temperature, 4°C and -20°C for 100 days to investigate the influence of storage temperature and time on extracted DNA quantity and success rate of STR typing. Samples stored at room temperature exhibited a faster decline in DNA yield with time and lower typing success rates as compared to those at 4°C and -20°C. This trend can likely be attributed to DNA degradation. In conclusion, this study presents a

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