

## X-SNP typing for analysis of degraded DNA from formalin-fixed tissues

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To develop an available, high resolution SNP typing method for extremely degraded DNA from unbuffered formalin-fixed human tissue.

**Method:** Various tissues (heart, brain, liver, spleen, kidney, lung, stomach and intestine) from autopsy were immersed in unbuffered formalin under room temperature and sampling at regular intervals. DNA was extracted, quantified and qualified by QIAamp kit, Quantifiler kit and Identifiler kit respectively. 52 X-SNP loci showing independent inheritance and high polymorphisms in Chinese Han populations were selected and the primers were designed by Mass ARRAY Assay Design software. Multiplex PCR was carried out in four amplification reactions and the related polymorphic sites were analyzed by allele-specific primer extension and followed by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS).

**Results:** All the amplicons of 52 X-SNP loci were shorter than 105bp. 98%-100% of X-SNP loci were detectable from tissues preserved in unbuffered formalin for 37 days and 88.46%-100% for 44 days by the assay. While, less than fifty percent of intact STR loci could be detected with Identifiler kit when the tissues were preserved in unbuffered formalin over 30 days.

**Conclusions:** SNP typing method was a useful tool for extremely degraded DNA because of its high amplification efficacy to small DNA fragments less than 105bp.

### Biography

Yan Liu is serving as a forensic biologist for Institute of Forensic Science, Ministry of Justice in China. Her professional interests focus on the DNA typing of difficult samples such as formalin-fixed and paraffin embedded human tissues or other human remains. She has published more than 15 papers in reputed journals and is serving as an editorial board member of the *Journal of Forensic Medicine* in China.

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