

## **QUALITY CONTROL MEASURES OF LARGE-SCALE DNA TEST FOR DATABASE SAMPLE**

Yao Yiren, Bai Xue, Yu Zhengliang, Shang Lei, Ding Guangshu, Wang Xi, Li Wangshui  
Institute of Forensic Science, Ministry of Public Security

China national DNA database has a history of 18 years and has kept more than 60 million short tandem repeat (STR) profiles. Large-scale DNA test for database sample is an important technology, which makes China National DNA database developed rapidly in recent years. Standard blood cards or buccal cards are processed by sample acceptance, sampling, amplification, detection, analysis, review, retest, quality inspection, sample sorting and data summarization. The characteristics of the testing process are batch and standardization, which is different from the testing of crime scene samples in the DNA lab. Our department can test 10,000 samples every day. Based on the experience of long-term Large-scale DNA testing and learn from the relevant ideas of assembly line production, this paper summarizes a series of quality control measures including, 1) Control reagent quality; 2) Use barcode technology in sample management; 3) Double check the data; 4) Workflow assistance software; 5) Sampling inspection; 6) Repeat test. Due to the large number of samples, most quality control measures are prevention-based and involve the entire process of testing. We must eliminate unqualified data during its formation. Summary of these measures not only provides the quality assurance for the development of the DNA database, but also gives references for setting up a systematic test standard in the future.