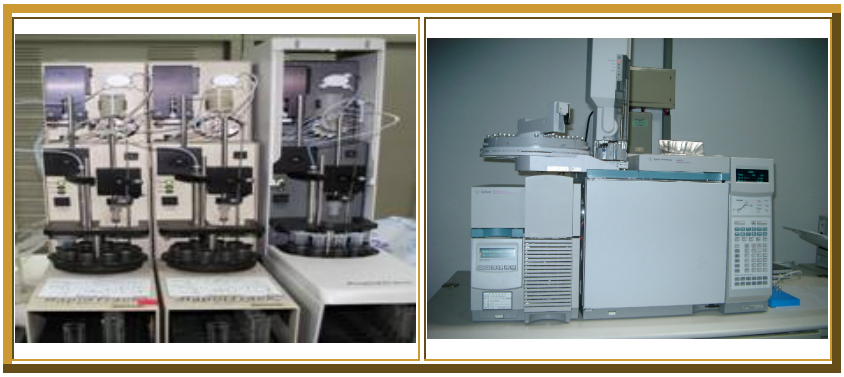
V. Drug Metabolite Analysis

A. Drug urine analysis:

The first drug urine test in Taiwan was accomplished by this laboratory in 1954. This laboratory is the only test laboratory responsible for re-testing drug urine cases which are entrusted from courts and prosecutors offices in Taiwan at present.



SPE Extraction System **GC/MS**

Drug urine test is qualitatively analyzed by using immunoassay screening test followed GC/MS confirmatory test in this laboratory. Precise instruments like LC/MS/MS and GC/MS/MS are used for trace detection of drug in the urine samples. The examined items of drug urine test include the metabolites of opiate, amphetamines, ketamine, cannabis, cocaine, sedative hypnotics and some emerging designer drugs.

B. Drug Hair Analysis:

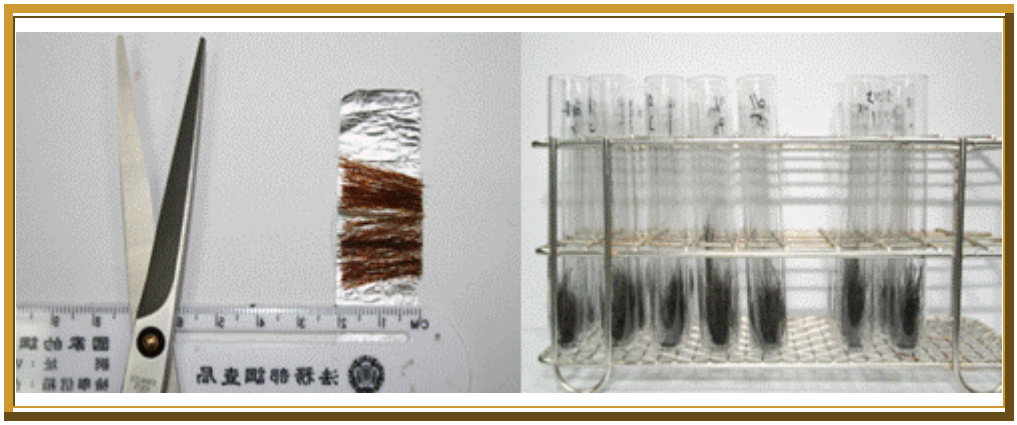
Analysis of urine metabolites from drug abusers is a traditional method for demonstration of drug abuse. Most drug metabolites in urine, however, decayed within 2-3 days after used. Hair analysis is proven to conquer these problems and provides a secure, retrospective window of detection. The pioneering drug hair test in Taiwan was accomplished by this laboratory in 1997.

Drugs or drug metabolites are remained in individual hair by the circulation of blood, sweat and other external sources during the hair

growth phase after drugs used. Because hair grows at a relatively constant rate, hair analysis can provide a history of drug consumption in both time and amount.

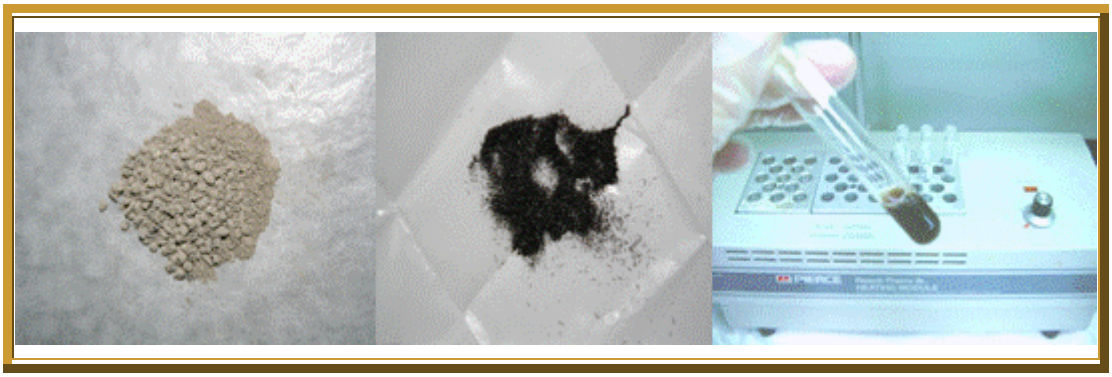
Hair analysis is a reliable indicator of long-term drug abuse. The detectable window can range from months to years, depending on the length of the hair shaft. The detection instruments for hair drug test are based on GC/MS, GC/MS/MS, LC/Ion-Trap MS, and LC/MS/MS etc.

Hair types：Head hair, Axillary hair, Pubic hair

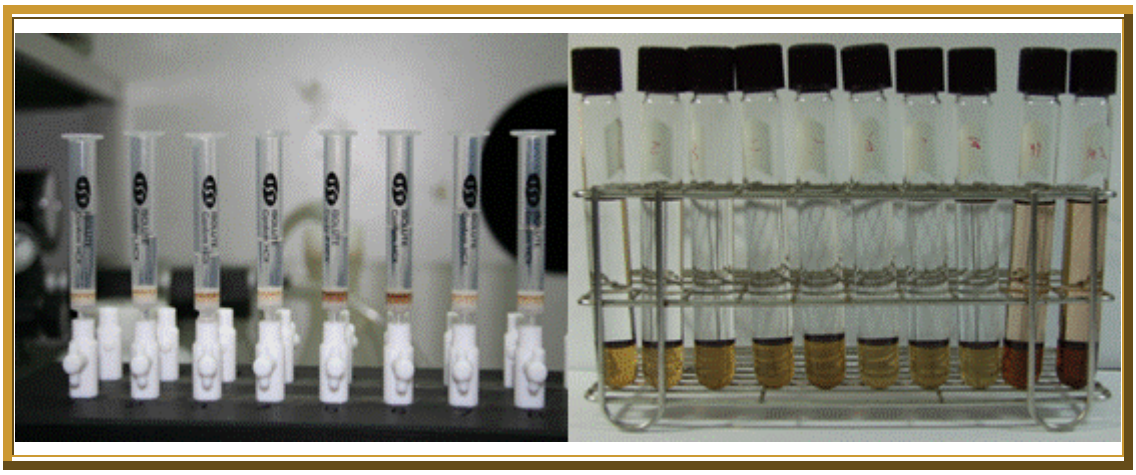


Procedures of segmental analysis for hair samples

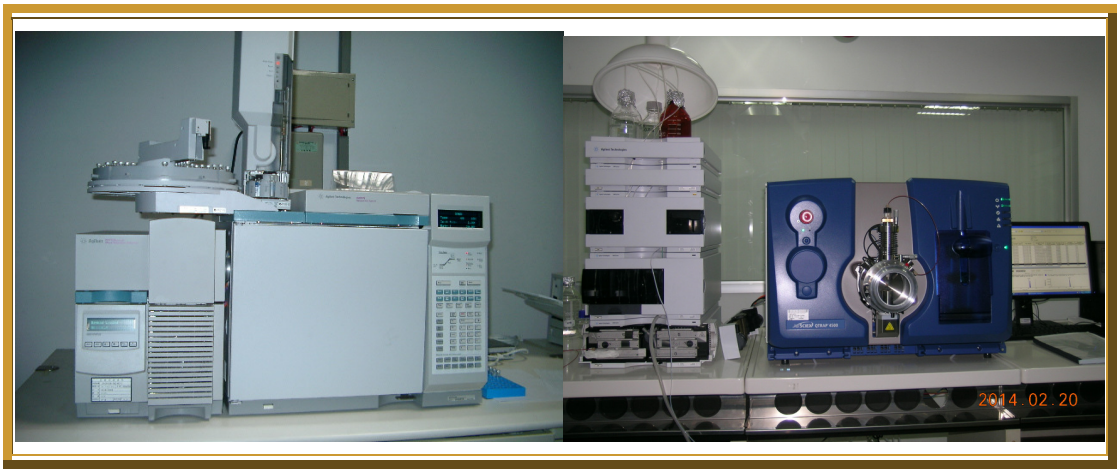
Procedures of washing hair samples



Procedures of digestion of hair samples



Solid phase extraction and liquid-liquid extraction for hair analysis



GC/MS and LC/MS/MS

LC/Ion-Trap MS and GC/MS/MS