

## **ADVANCES IN HIGH THROUGHPUT PROCESSING OF CASEWORK AND DATABASE SAMPLES**

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Results now support the effectiveness of aggressively analyzing breaking-and-entering cases and developing databases of these felons. Automated workstations have proven successful in processing database samples and more recently casework samples. However, casework samples, reference samples, and many database samples are on solid supports that do not lend themselves to high throughput manipulation. We have developed the Slicprep™ 96 device to reduce processing time for these sample types. This device consists of a 96 spin basket unit, a 96 deep well plate and a collar for raising the baskets. In the incubation mode, the solid supports are placed in the baskets that are inserted in the deep well plate. Digestion buffer or lysis buffer is added to cover the samples and the sealed unit is incubated at a desired temperature. The baskets are then raised and a collar is inserted so that centrifugation in a plate rotor will remove the DNA-containing solution from the solid supports. The deep well plate can then be placed on a workstation for purifying the DNA. We will show data demonstrating the effectiveness of this system for buccal swabs, FTA blood punches, and touch casework samples.

Over the past 4 years the Beckman Coulter Biomek 2000 Laboratory Automation Workstation has been successfully used in many forensic laboratories to automate the extraction of DNA using Promega's DNA IQ™ System. Recently Beckman Coulter released the Biomek 3000 which provides sample tracking and the ability to create a single method with variables to run different numbers of samples and sample types. To provide support for this workstation, Promega validated a method for purifying DNA using the DNA IQ system. User selections allow a single method to process any number of samples and sample types. In addition, new hardware has been added to enhance performance and reduce the chance of cross contamination. Processing is done in a 1.2ml deep well plate to minimize cross contamination. This allows for more efficient wash and elution steps using a small footprint shaker. An electronic heater provides rapid high temperature control that conducts heat through a new heat transfer block that surrounds each well. Data will be presented showing the utility of the method and new hardware components in processing database and casework samples.