

IMPROVED PERFORMANCE FOR FORENSIC CASEWORK: EXTRACTION AND ISOLATION UPDATES FOR THE MAXWELL® 16 INSTRUMENT

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The DNA IQ™ System is an established approach to the recovery of DNA from casework samples. The recovery of DNA from casework samples depends upon the efficiency of two separate processes. Extraction efficiency refers to the recovery of samples that are removed from solid supports, such as swabs, or fabrics. Isolation efficiency refers to the purification chemistry.

We have recently improved the performance of the DNA IQ™ System on the Maxwell® 16 instrument. We accomplished this enhancement through independent improvements in extraction and isolation chemistries. First, we designed a new LEV plunger of a proprietary material in order to increase the post-extraction isolation efficiency of the DNA IQ™ System chemistry, as performed on the Maxwell® 16 instrument. This design change significantly reduced variability and improved isolation efficiency. We can demonstrate the effect of our LEV plunger redesign upon isolation efficiency using liquid samples. Second, we have recently improved upon the extraction chemistry that precedes the isolation process through the optimization of the extraction buffer.

These changes resulted in increased DNA yield across a variety of samples, which are demonstrated through comparisons to organic extractions.