

## **A NOVEL METHOD FOR PERFORMING DIFFERENTIAL EXTRACTIONS RESULTING IN HIGH PURITY AND YIELD**

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Processing of sexual assault samples requires separation of female epithelial cells from male sperm cells. A successful differential extraction process must efficiently extract sperm from a solid matrix and retain that sperm during the separation process. Resulting fractions must have minimal contamination of the other cell type. Current methods are laborious and time-consuming as they require a large number of washes and centrifugation steps. In addition, this method is highly variable between technologists. We will describe a method that utilizes DNA IQ resin as a pellet-capping layer on top of the sperm pellet. This chemistry, combined with a specially designed magnet, allows the epithelial DNA-containing supernatant to be separated and collected without the need to re-centrifuge samples after every wash. Average purity is shown to be 99.4% and 98.1% from 10k and 5k sperm samples, respectively. This method will provide reproducible, consistent separation of epithelial and sperm cells with high purity and yield which are compatible with current DNA isolation procedures.