

EXAMPLES OF ITEMS FOR HIGH SENSITIVITY TESTING

touched items (where skin cells were potentially deposited)

- clothing (touched/grabbed)
- handled items
 - car swabs
 - handles of brushes, combs, tools
 - jewelry
 - keys
 - lighters/matches
 - pens
 - sides of bottles and cans
 - weapons (gun swabs, knife handles, sticks)
- limited contact samples
 - door knob
 - window sill
 - various surfaces
- fingerprints (fresh and archived)
- air bags
- letters and envelopes
- objects used for binding or strangulation
 - cords, ropes, strings, zipties
 - tape

fingernails

degraded and/or old samples

items where initial testing of samples showed low amounts of DNA and/or inhibition

- items that contain body fluids: blood, semen, saliva
- tissue, bone, hair roots
- clothing (to obtain skin cells of wearer)

"Without the capabilities of the High Sensitivity Team our office would not have been able to get a conviction in a major rape case that occurred in 2009. The team helped us through the whole process which included helping us in understanding the results of the testing and providing us with knowledgeable and professional staff for the witness stand."

ADA Donald O'Geen

Wyoming County District Attorney's Office



"...the LCN DNA testing method as it is performed by the OCME and as it is interpreted by the OCME protocols, will consistently yield reliable results. The Court also finds that OCME validation studies regarding LCN DNA typing yielded reliable and reproducible results in 100 percent of the samples tested."

Justice Robert J. Hanophy

Supreme Court Queens County

www.nyc.gov/ocme/highsens
212-323-1207
HighSensTesting@ocme.nyc.gov

HS High Sensitivity DNA Testing

Science Serving Justice



NYC Office of Chief Medical Examiner



Department of Forensic Biology

The NYC OCME is now offering
**High Sensitivity
DNA Testing**
for jurisdictions outside
the City of New York

High Sensitivity (HS) DNA Testing is a reliable technology used to recover and detect small amounts of DNA. This is also referred to as low template DNA (LT), low copy number (LCN), low level, or "touch" DNA testing. High Sensitivity DNA Testing is a powerful tool as it can enhance law enforcement's ability to identify or exclude individuals suspected of crimes.

The High Sensitivity DNA Testing Team in the Department of Forensic Biology at the New York City Office of Chief Medical Examiner (NYC OCME) has been processing casework items since January 2006.



The OCME Forensic Biology Laboratory, since its inception in 1938, has remained at the forefront of forensic science in the United States.

The OCME was the first US laboratory to implement male specific YSTR testing and subsequently, High Sensitivity DNA testing.

Low Template DNA analysis has been used throughout the world for decades; it is not unique to the forensic community. The methods and instruments employed are the same as traditional high template DNA testing with a few modifications to account for the increased sensitivity. The High Sensitivity DNA laboratory is located in separate, sterile areas within the Department of Forensic Biology's state-of-the-art facility, which is one of the largest public forensic DNA laboratories in the world.



Efforts to enhance DNA recovery and detection start with evidence collection. The OCME uses its own specialized High Sensitivity swab to maximize the amount of DNA collected from an item.



As needed, analysts also use the "scraping technique" to remove skin cells from touched or worn clothing and fabrics.



The careful treatment of samples extends to the DNA extraction phase of testing where individual attention is given to each sample in order to recover as much DNA as possible. Analysts assess the quality and quantity of the extracted DNA with an optimized quantitation method. Depending upon the amount of DNA recovered, High Sensitivity or traditional DNA detection techniques are then applied to generate DNA profiles.

High Sensitivity DNA testing as performed by the NYC OCME utilizes the most advanced DNA recovery, detection, and analysis methodologies. These methods have been extensively validated, reviewed by regulatory committees, and published in peer reviewed journals. Analysts are specially trained in these methods and have frequently testified to High Sensitivity results in New York City as well as in jurisdictions outside the City of New York.

The NYC OCME is continually working to further optimize High Sensitivity Testing and to validate other molecular modes for individualization.

Science Serving Justice