

Y-STR Screening

**SART Listserv
September 2007**

Issue: We use robotic Y-STR screening and do not complete full STR (profiles) until the investigation yields a suspect in the case.

- 1) What states are using robotic Y-STR screening and do they then wait to do full STR tests until a suspect has been identified?
- 2) If they are using Y-STR do they happen to know how many cases are still awaiting a suspect to be named and how long some of those have been sitting stagnant?

For background information, you might want to see "Types of Analysis" on the DNA.gov website at <http://www.dna.gov/basics/analysis/>

Michigan

- The MSP system is still in validation for robotics and has not started validation on Y-STR kits to date.
- We do differential extractions and quantitate our male fractions to determine an approximation of how much DNA is contributed by sperm in all our alleged mixtures.
- At present, we will then run our male fractions through DNA analysis even if the quantity is below the detectable threshold, and occasionally get male activity that can be used to help exclude male donors. So, to answer the second question first, we have no cases that are not DNA analyzed ("stagnant") in our system if there is an indication of either seminal fluid or saliva.
- It is my understanding that the Y-STR systems are very sensitive and probably a great way to screen whether or not DNA analysis is indicated to find types foreign to the victim in a male on female assault. To answer the first question: I believe we will be using a similar screen in the future, but will always run any evidence deemed appropriate whether or not a suspect has been identified.
- We have had a lot of success in generating suspects by entering unknown male profiles into our CODIS (COmbined DNA Indexing System).

Wisconsin

- At this point in time, our backlog is not so bad that we need to the mass screening.
- We are not doing a mass screening with Y STR's. We are still addressing each case as a single event and will screen first for standard DNA analysis and second for Y STR's to determine if there is any male contribution on any item.
- We do always attempt to type in standard STR's

West Virginia

- In WV, we do have robotics in the laboratory that we are in the process of validating but the Y-STR screening involves the issues of time and evidence consumption.
- If a simple extraction instead of a differential extraction is performed to do Y-STR screening quickly then the resulting STR testing would usually show a mixture, which is more difficult to interpret.
- Differential extractions are not fully automatable yet so a large investment of time and money would be necessary to perform differential extractions/Y-STRs on all samples when we know a significant percentage will be negative.
- I have not given up on this idea but right now, I do not believe this is feasible in WV.