
Procedure for Direct to DNA Work Flow using the QIAcube

1.0 Purpose - This procedure specifies the method for processing a Sexual Assault Evidence Collection Kit (SAECK) and acceptable additional items through Forensic Biology case work analysis.

2.0 Scope - This procedure applies to those Forensic Scientists who have been released to do forensic casework in Forensic Biology. The procedure also applies to trainees.

3.0 Definitions - See Section Definition List

4.0 Equipment, Materials and Reagents - N/A.

5.0 Procedure

5.1 Background – Case scenarios of SAECKs are divided into two types that will guide the work flow determination (See 5.3). SAECKs where evidence is collected more than 5 days after the event will be evaluated for analysis on a case-by-case basis. If a consensual partner is reported up to 5 days prior to the incident, an elimination standard is required. SAECKs will be tested using a direct to DNA approach. Serology testing is not initially performed on direct to DNA items associated with sexual assault kits. Initial testing will include swabs contained within the SAECK as guided by the provided case related information, any relevant reference standards, and underwear and/or a condom if applicable. Supplemental testing of other evidence items may be requested if testing for the SAECK is negative; however, results of the SAECK testing will be reported before any additional testing is commenced.

5.2 Sampling of Items

5.2.1 All swabs/samples collected for the direct to DNA process must be differentially extracted unless details of the case state that contact other than penile penetration occurred.

5.2.2 If multiple swabs are collected from a single location, the swabs shall be tested by removing ½ of each swab collected (by type).

5.2.3 If a single swab is collected from a location, the swab shall be tested by removing the entirety of each swab (by type).

5.2.4 Underwear contained inside or outside of SAECK

5.2.4.1 Examine the underwear using an alternate light source (ALS) for areas of interest.

5.2.4.1.1 If areas of interest are noted, collect a representative swabbing. This swabbing will be extracted as noted in 5.2.1

5.2.4.1.2 If no areas of interest are noted, a representative swabbing from the crotch area (or drainage area) shall be collected. This swabbing will be extracted as noted in **5.2.1**.

5.2.4.2 If penile penetration did not occur (digital only), a representative swabbing shall be collected from area(s) of interest from the underwear as guided by the details of the case. This swabbing will be extracted as noted in **5.2.1**.

5.2.5 Condom contained inside or outside of SAECK

5.2.5.1 Two total swabbings shall be collected from a condom. One shall be collected from the inside of the condom, and one from the outside of the condom. This swabbing will be extracted as noted in **5.2.1**.

5.2.6 The analyst should use the SWGDAM/NIJ recommended time frames for evidence collection in conjunction with the case information provided for decisions of which samples to process for testing.

Type of Assault	Collection Time
Vaginal	Up to 120 hours (5 days)
Anal	Up to 72 hours (3 days)
Oral	Up to 24 hours (1 day)
Bite marks/saliva on skin	Up to 96 hours (4 days)
Unknown	Collect respective samples within the time frames listed above

5.3 Case Types – as defined for the workflow for Direct to DNA processing of SAECK

5.3.1 Case Type 1 – Cases with a single assailant, no consensual partner, and clear victim recall of events.

5.3.1.1 The sample with the best quantification results must be taken forward to STR testing. If more than one sample is sufficient, samples will be chosen based on sample type:

5.3.1.1.1 Orifice swabs shall be chosen first.

5.3.1.1.2 External body swabs shall be chosen second, followed by underwear and condom swabs.

5.3.2 Case Type 2 – Cases with multiple assailants, consensual partners, or lack of clear victim recall, and cases involving a male victim and a male suspect.

5.3.2.1 At least one fraction from each item that meets the requirements for STR testing based on quantification results shall be taken forward (See Procedure for DNA Quantitation Using Quantifiler Trio).

6.0 Limitations – Due to the nature of the cases worked by Forensic Biology, it is difficult to cover every possibility with a procedure. Exemptions may be made, in writing, by the Forensic Biology FSM or Supervisors on a case-by-case basis.

7.0 Safety – N/A

8.0 References

Forensic Biology Section Procedure for DNA Extraction using the EZ1 Advanced Biorobot.

Forensic Biology Section Procedure for DNA Quantitation Using Quantifiler Trio.

Forensic Biology Section Procedure for Semen and Sperm Analysis

National Best Practices for Sexual Assault Kits: A Multidisciplinary Approach (<https://www.NIJ.gov>)

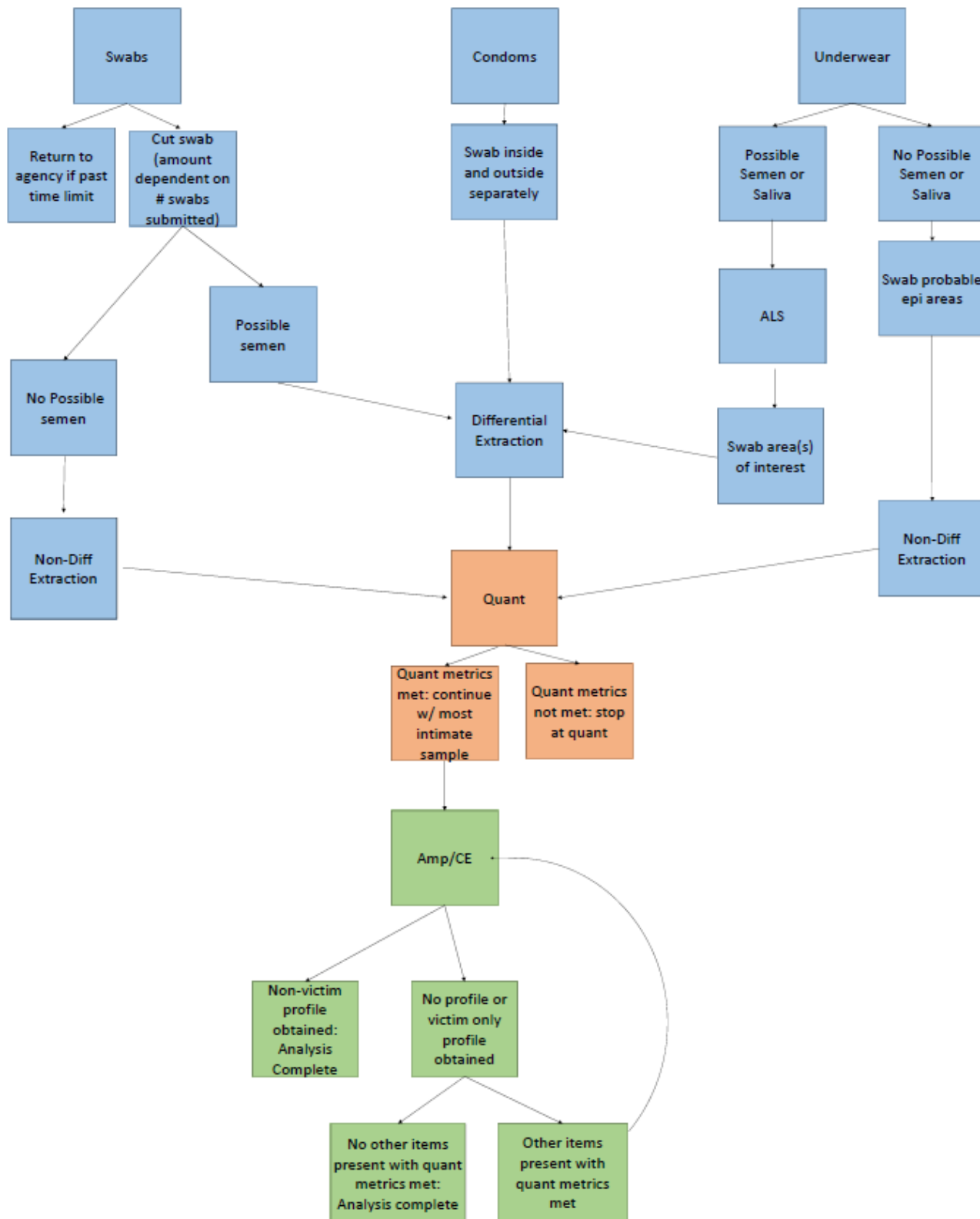
SWGDM Recommendations for the Efficient DNA Processing of Sexual Assault Evidence Kits

9.0 Records - N/A

10.0 Attachments - N/A

Revision History		
Effective Date	Version Number	Reason
06/18/2018	1	Original Document
01/25/2019	2	5.1 correct grammar; update attachments; 5.2.2, 5.2.3 – clarified for amount of swabs consumed; 5.2.4.1 add use of ALS; 5.2.6 added recommended time frames for sample processing; 5.3.2.1 clarified wording

Direct to DNA Workflow for SAECK: Case Type 1



Direct to DNA Workflow for SAECK: Case Type 2

