

DNA: General Extraction Information

Safety

SAFETY WARNING

Biological samples have the potential to transmit infectious diseases. All analysts should use caution when performing this procedure and follow the *Bloodborne Pathogen Program* in the *Safety Manual*.

Procedural safeguards

QAS 6.1.2

The following is a list of procedural safeguards for DNA extraction.

- Wipe down the work area with 10% bleach or ethanol before beginning the extraction process.
 - Put bench cover material (absorbent pads or butcher paper) on all work areas.
 - Never pipette reagents directly from a stock bottle. Reagents are to be poured into a sterile tube (for example, sterile disposable 50 mL centrifuge tube) before pipetting into sample tubes.
 - Have a wash bottle of 10% bleach solution or ethanol ready to wash all non-disposable implements (for example, forceps) each time they come in contact with samples. After washing with a stream of liquid, wipe dry with a clean lab-wipe tissue. Repeat twice.
 - Barrier pipette tips must be used when pipetting solutions containing DNA. Pipette tips must be changed between each sample, including the addition of the same reagent to each sample.
 - Wear gloves at all times and change them frequently when handling samples. Change gloves immediately if they come into contact with items containing DNA and may become contaminated.
 - Always extract reference samples separately from evidence samples.
 - Microcentrifuge tubes containing DNA should be pulse-centrifuged before removing the cap to minimize the possibility of creating DNA aerosols. Use a decapper to open tubes. Clean the decapper whenever it has come into contact with liquids containing DNA.
 - Do not touch the interior portion of the microcentrifuge cap.
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Controls

The extraction procedures should use the following controls:

- QC stain control (with reference samples only)
 - reagent blank (at least two reagent blanks for all evidence sample batches)
 - substrate control (when appropriate)
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Sample types

For extraction of each sample type, refer to the following documents:

- Non-hair samples such as blood, saliva, or contact samples
 - *DNA: Organic Extraction*
 - *DNA: BioRobot EZ1 and EZ1 Advanced XL Extraction*
 - Keratinized samples such as hair and fingernails
 - *DNA: Organic Extraction*
 - *DNA: BioRobot EZ1 and EZ1 Advanced XL Extraction*
 - Samples containing sperm
 - *DNA: Differential Extraction*
 - *DNA: BioRobot EZ1 and EZ1 Advanced XL Extraction*
 - *DNA: Organic Extraction*
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