Technical tips for sample management

- The device must be kept clean and DNA-free. The UV cycle will assist in removing DNA but the wells and the top and base of the heating block should be cleaned regularly using dilute HClO bleach on a swab. Wipe residual bleach off the surfaces using a second swab soaked with DNA-free water.
- The device creates DNA that can be used for SNiPs, STRs, quantitative, multiplex and routine PCR applications.
- OD_{260} methods for yield estimation are unsuitable for the DNA produced by the PDQeX. For accurate yield assessment, a qPCR is recommended.
- For best results prepare and manage samples at 4° C, or on ice before and after extraction.
- For long term storage of the extracted DNA, add TE buffer to 1x and store at -20° C.

ZyGEM

Automated DNA Extraction

BLOOD DNA EXTRACTION

(for use with PDQeX XBX- XBP- kits)

... simple

Blood Lysis Protocol

Sample Types:

- Liquid Blood (Fresh, Heparin, EDTA, Citrate)
- Blood stains - direct extraction from fabric
- Lifted blood swabs

Reagent Storage:

- *prep*GEM or *forensic*GEM -20° C
- ORANGE Plus Buffer 4° C
- Enhancer 4° C

Method:

1. Completely thaw *forensic*GEM and mix by gently inverting the tube repeatedly. Remove ORANGE Plus buffer and the Enhancer from refrigerator and mix.
2. Prepare a master mix for blood lysis. Per 100 µl extraction:

10 µl	ORANGE Plus Buffer
10 µl	Enhancer
2 µl	*prep*GEM or *forensic*GEM

Add sufficient DNA-free water so that the total volume is 100 µl after the sample has been added

3. Dispense 100 µl of master mix into each PDQeX cartridge. Flick the liquid to the bottom of the cartridge and make sure there are no bubbles.
4. Add the sample (1-5 µl of liquid blood), making sure that it is completely mixed into the reagents.
5. For swabs, add 1/4 of the swab head and for fabric, a 5 mm x 5 mm piece is usually sufficient.
6. Put the cap on the PDQeX cartridge by inserting the tapered peg into the cartridge.
7. Load a 24-well plate or 8-strip tubes in the collection drawer and put the drawer in place.
8. Insert the PDQeX cartridges into the heating block.

   MAKE SURE THE PDQeX CARTRIDGES CORRESPOND WITH A COLLECTION TUBE OR WELL. OTHERWISE YOU WILL LOSE YOUR DNA
9. Cover the cartridges with the hinged flap and close the sliding door.
10. Select the "Blood" program.

Default blood program:

75° C	10 mins.
95° C	2 mins.
105° C	2 mins.

- Times may be adjusted by internal laboratory optimisation.
- Changes to the default temperatures are not recommended.

PRECAUTIONS

1. Do not load the machine if the control screen indicates a temperature above 50° C.
2. Open the sliding door, and ensure the collection drawer and heating block are clean and DNA-free.
3. Ensure the collection drawer is inserted as far as possible, and that it is straight.
4. If less than 24 reactions are planned, ensure that the PCR tubes are placed in the holes in the drawer corresponding to the channels to be used in the heating block.