June 2019

Quick-Start Protocol

Investigator® Casework GO! Kit

Contents

Casework GO! Lysis Buffer	2 x 40 ml
Proteinase K Solution	2 x 1.4 ml
Nuclease-free water	2 x 1.9 ml

The Investigator Casework GO! Kit (cat. no. 386546) can be used for direct amplification of casework samples and thus enables an accelerated workflow in casework analysis. It allows the rapid processing of swabs from casework samples, including cuttings of sexual assault swabs or other materials, without the need of further purification. The lysate can be used directly for quantification with all Investigator Quantiplex assays or for DNA profiling using all Investigator STR assays (unless data from the quantification indicates the presence of possible PCR inhibitors).

In sexual assault screening analysis, the Investigator Casework GO! workflow can facilitate the sample processing decision by male-quantification and Auto/Y ratio.

Storage

The Investigator Casework GO! Kit should be stored at 2–8°C. For semen samples only (to be ordered separately): 1M DTT should be stored at –30 to –15°C. After the first thawing, DTT should be stored in smaller aliquots at –30 to –15°C to avoid repeated freezing/thawing. Stored properly, the components are stable until the expiration date indicated on the kit.

Further information

- Investigator Casework GO! Kit product page: **www.qiagen.com/casework-go**
- Safety Data Sheets: **www.qiagen.com/safety**
- Technical assistance: **support.qiagen.com**

Notes before starting

- Perform sample preparation in an area that is separate from the one used for PCR assay setup and PCR product analysis (post-PCR).
- Use disposable tips containing hydrophobic filters to minimize cross-contamination risks.
- Before opening the tubes with kit components, vortex and then centrifuge briefly to collect contents at the bottom of the tube.
- Equipment: Pipets, vortex mixer, heat shaker; for semen: 1 M DTT, 1 ml (cat. no. 1117316)
- The following collection devices are recommended for Casework GO!:
  - Cotton swabs: Puritan® sterile cotton-tipped applicators (Puritan cat. no. 25-806 1PC); Heinz Herenz ETO-treated DNA-examinated swabs (Heinz Herenz cat no. 1020055); Sarstedt® swab or forensic swab (Sarstedt cat. nos. 80.629 or 80.626, respectively)
  - Polyester swabs: Puritan sterile polyester-tipped applicators (Puritan cat. no. 25-806 1PD); Pushoff™ swab, standard bud (abf cat. no. 08228)
  - Flock swabs: FLOQSwabs™ (Copan cat. nos. 552C and 502CS01) or microFLOQ® direct (Copan cat. no. 60U001D); MicroTest™ (Thermo Fisher cat. no. R12542)
- Lower yields might occur with Crime Scene 4N6FLOQSwabs™ (e.g., Copan cat. no. 3503C)

Master Mix preparation for semen samples

1. Dilute 1 M DTT according to Table 1 to obtain a 10 mM DTT solution.

Table 1. Dilution of DTT (1:100)

Component	Volume
Nuclease-free water	495 µl
DTT, 1 M	5 µl
Total volume	**500 µl**

2. Mix the diluted DTT thoroughly with a vortex mixer.
3. Depending on the size of the collection device or cutting, a lysis volume of 100–400 µl can be chosen. Prepare fresh Master Mix according to Table 2 for the number of samples you would like to process, plus a 10% excess (e.g., if you have 20 samples, prepare Master Mix for 22).

Table 2. Setup of Master Mix for semen samples

Component	Volume per reaction	Volume per reaction	Volume per reaction	Volume per reaction
Casework GO! Lysis Buffer	93.5 µl	187 µl	280.5 µl	374 µl
Proteinase K	3.5 µl	7 µl	10.5 µl	14 µl
DTT, diluted 1:100	3 µl	6 µl	9 µl	12 µl
Total volume	**100 µl**	**200 µl**	**300 µl**	**400 µl**

4. Vortex the Master Mix thoroughly, and then briefly centrifuge. Continue with sample lysis.

Master Mix preparation for casework samples except semen

1. Depending on the size of the collection device or cutting, a lysis volume of 100–400 µl can be chosen. Prepare fresh Master Mix according to Table 3 for the number of samples you would like to process, plus 10% in excess (e.g., if you have 20 samples, prepare Master Mix for 22).

Table 3. Setup of Master Mix for casework samples except semen

Component	Volume per reaction	Volume per reaction	Volume per reaction	Volume per reaction
Casework GO! Lysis Buffer	96.5 µl	193 µl	289.5 µl	386 µl
Proteinase K	3.5 µl	7 µl	10.5 µl	14 µl
Total volume	**100 µl**	**200 µl**	**300 µl**	**400 µl**

2. Vortex the Master Mix thoroughly and then briefly centrifuge. Continue with sample lysis.

Sample lysis

1. Preheat a heater shaker to 60°C. (Ideally, also preheat a second heater shaker to 80°C.)
2. Place each of your samples (e.g., swab heads, cuttings, piece of fabric, etc.) into their own 2 ml safe-lock tube or other plastic material compatible with the heater shaker.

   Note: Do not use 1.5 ml tubes in 2.0 ml heat blocks, or proper heat transfer will not be guaranteed.

3. Add 100–400 µl Master Mix to your samples, according to the size of the collection device or size of cutting, etc.
4. Vortex closed samples, then centrifuge briefly to collect contents at bottom of the tube.
5. Place the sample tubes onto the heater shaker that has been preheated to 60°C, and incubate for 25 min with 900 rpm.
6. Remove the sample tubes from the heater shaker and transfer them onto a heater shaker that has been preheated to 80°C, and then incubate for 5 min without shaking.

   Note: This step improves lysis and inactivates the proteinase K.
7. Set up PCR reactions or store samples at 2– 8°C for short-term storage (up to 1 week) or at –30 to –15°C for long-term storage.

   Note: Casework GO! Samples are compatible with all Investigator DNA quantification and STR kits.

Revision history

Document	Changes	Date
HB-2668-001	Initial release	June 2019

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