Quick-Start Protocol May 2026

Investigator® 24plex GO! Kit

Part 2: Protocol for buccal cells Bode Buccal DNA Collectors™

All components of the Investigator 24plex GO! Kit (cat. no. 382426 or 382428) should be stored at –30°C to –15°C. Avoid repeated thawing and freezing. The Primer Mix, Allelic Ladder, and DNA Size Standard must be stored protected from light. DNA samples and post-PCR reagents (Allelic Ladder and DNA Size Standard) should be stored separately from the PCR reagents. Under these conditions, the components are stable until the expiration date indicated on the kit.

Further information

- *Investigator 24plex GO! Kit Handbook*: **www.qiagen.com/HB-1913**
- Safety Data Sheets: **www.qiagen.com/safety**
- Technical assistance: **support.qiagen.com**

Notes before starting

- Set up all reaction mixtures in an area separate from that used for DNA isolation and PCR product analysis (post-PCR).
- Use disposable tips with hydrophobic filters to minimize cross-contamination risks.
- Before opening the tubes, thaw the PCR components, vortex, and then centrifuge briefly to collect the contents at the bottom of the tubes.
- For buccal cells on Bode Buccal DNA Collectors, Investigator STR GO! Lysis Buffer (QIAGEN, cat. no. 386516) must be ordered separately.

Procedure

1. Collect a 1.2 mm punch from the tip (rounded end) of the Bode Buccal DNA Collector with a suitable tool (e.g., UniCore Punch Kit 1.2 mm, cat. no. WB100028) into a 0.2 mL PCR-grade plate or 0.2 mL PCR-grade tube.

   Important: Use only one punch at a time, per well or per tube.

2. Add 2 µL of the Investigator STR GO! Kit Lysis Buffer directly onto the 1.2 mm punch. Centrifuge briefly if necessary to collect the punch and buffer at the bottom of the plate or tube.
3. Incubate the sample at 95°C for 5 min. Do not seal the plate or close the tube.

   Note: The Lysis Buffer will evaporate.

   Note: Cool down the PCR plate or tube for 5 min at room temperature (15–25°C) before dispensing the master mix (step 5).
4. Prepare a master mix according to Table 1. Vortex the reaction mix thoroughly. The master mix contains all of the components needed for PCR except the template (sample) DNA.

   As some loss of reagents can occur during transfers, prepare the mix with additional reactions included. Also include positive and negative control reactions.

Table 1. Master mix setup

Component	Volume (µL) per reaction
Fast Reaction Mix 2.0	7.5
Primer Mix	12.5
Total volume	**20.0**

5. After incubation, dispense 20 µL of the master mix into each well of the PCR plate or the PCR tubes containing the 1.2 mm punch.

   Note: Do not mix the reaction after distributing the master mix.
6. Prepare positive and negative controls.
   - **Positive control**: Use 2 µL Control DNA (i.e., 10 ng).

     Note: The amount of Control DNA may need to be adapted after setting the optimal PCR cycle number in your laboratory if signals are too low or too high. Do not add a blank disc to the positive control well.
   - **Negative control**: Do not add any template DNA. Do not add a blank disc or water to the negative control PCR tube or well.
7. Briefly centrifuge the reactions to ensure that the discs are fully submerged.
8. Program the thermal cycler according to the manufacturer's instructions, using the conditions given in Table 2a or Table 2b.

   Note: When using the GeneAmp PCR System 9700 with an Aluminum Block, select **Std Mode**; when using a Silver Block or Gold-plated Silver Block, select **Max Mode**. Do not select **9600 Emulation Mode**.

Note: For cyclers with higher ramp rates (e.g., VeritiPro Thermal Cycler), adjust the ramp rates to 4°C/s. Alternatively, if the cycler offers an emulation mode, enable it and select a cycler that is included in the validation report.

After the cycling protocol is completed, store samples at –30°C to –15°C protected from light, or proceed directly with running the electrophoresis.

Table 2a. Standard cycling protocol for buccal cells on Bode Buccal DNA Collectors

Temperature (°C)	Time	Number of cycles
98*	30 s	
64	40 s	3
72	5 s	
96	10 s	
61	40 s	24
72	5 s	
68	5 min	–
60	5 min	–
10	∞	–

* Hot-start to activate DNA polymerase.

Table 2b. Optional cycling protocol for buccal cells on Bode Buccal DNA Collectors

Temperature (°C)	Time	Number of cycles
98*	30 s	
64	40 s	3
72	5 s	
96	10 s	
61	40 s	24
72	5 s	
68	2 min	–
60	2 min	–
10	∞	–

* Hot-start to activate DNA polymerase.

Table 2b details previously published cycling conditions that may continue to be used if incomplete adenylation is not visible within the electropherograms.

Document Revision History

Date	Description
04/2021	This is the initial release of the second part of the *Investigator 24plex GO! Kit Quick-Start Protocol*, which is divided into 3 parts for printing purposes. The first and third parts of the Quick-Start Protocol are HB-1907 and HB-2895, respectively.
05/2026	Added note on cooling down the plate/tubes before adding Master Mix. Added note on ramp rates for fast cyclers.

Scan the QR code for handbook.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual.