



Quick-Start Protocol

May 2026

Investigator[®] 24plex GO! Kit

Part 1: Protocol for blood or buccal cells on FTA[®] or other paper

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 paper, Investigator STR GO! Punch Buffer (1000) or (200) (cat. no. 386528 or 386526, respectively) must be ordered separately.
- For long-term stored buccal cells on paper or for buccal cells on paper that had not previously produced a loadable STR result, we recommend the optional protocol in step 4 of "Protocol: PCR Amplification from Buccal Cells on FTA and Other Paper" (*Investigator 24plex GO! Kit Handbook*, www.qiagen.com/HB-1913).

Procedure

1. Prepare a master mix according to Table 1. 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	
	Blood on FTA or other paper	Buccal cells on FTA or other paper
Fast Reaction Mix 2.0	7.5	7.5
Primer Mix	12.5	12.5
Investigator STR GO! Punch Buffer	–	2.0
Total volume	20.0	22.0

Note: In case blood on FTA samples has been stored for longer periods, we recommend the Investigator STR GO! Punch Buffer be used to overcome potential inhibition. Add 3 µL Investigator STR GO! Punch Buffer per reaction.

2. Vortex the reaction mix thoroughly and dispense 20 µL for blood samples and 22 µL for buccal cell samples the required reaction volume per sample into the PCR tubes or the wells of a PCR plate.
3. Take a 1.2 mm punch from the center of the sample spot with a suitable tool (e.g., UniCore Punch Kit 1.2 mm).

Note: For buccal cells collected using Indicating FTA Cards, take the punch from a white area. This color indicates successful sample transfer.

Important: Use only one punch at a time.

4. Transfer one 1.2 mm disc to each reaction.
Note: Do not mix the reaction after disc transfer.
5. Prepare positive and negative controls.
 - **Positive control:** Use 2 µL of Control DNA for blood samples or 1 µL of Control DNA for buccal cell samples on FTA or other paper.
 - **Negative control:** Do not add any template DNA. Do not add a blank disc or water to the negative control PCR tube or well.
6. Briefly centrifuge the reactions to ensure that the discs are fully submerged.
7. 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

Temperature (°C)	Time	Number of cycles
98*	30 s	
64	40 s	3
72	5 s	
96	10 s	
61	40 s	22 (for blood samples on FTA or other paper) 23 (for buccal cell samples on FTA or other paper)
72	5 s	
68	5 min	–
60	5 min	–
10	∞	–

* Hot-start to activate DNA polymerase.

Table 2b. Optional cycling protocol

Temperature (°C)	Time	Number of cycles
98*	30 s	
64	40 s	3
72	5 s	
96	10 s	
61	40 s	22 (for blood samples on FTA or other paper) 23 (for buccal cell samples on FTA or other paper)
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
02/2021	Table 2 is split into Tables 2a and 2b, Table 4 is split into Tables 4a and 4b, and Table 6 is split into Tables 6a and 6b. Editorial and styling changes.
04/2021	Divided the Quick-Start Protocol into 3 parts for printing purposes. The second and third parts of this Quick-Start Protocol are HB-2889 and HB-2895, respectively.
05/2026	Added note on alternative protocol for long-time stored buccal cells on paper. Added note on ramp rates for fast cyclers.



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