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Quick-Start Protocol

QIAxcel[®] DNA High Resolution Kit and QIAxcel DNA Screening Kit

For electrophoretic analysis of DNA samples using the QIAxcel system

The QIAxcel DNA High Resolution (cat. no. 929002) and QIAxcel DNA Screening Kit (cat. no. 929004) should be stored at 2–8°C upon arrival. The QX Intensity Calibration Marker, QX DNA Alignment Markers, and QX DNA Size Markers should be stored at 2–8°C. All remaining buffers and kit components can be stored at room temperature (15–25°C).

Further information

- *QIAxcel DNA Handbook*: www.qiagen.com/HB-0286
- *QIAxcel Connect System User Manual*: www.qiagen.com/HB-2890
- Safety Data Sheets: www.qiagen.com/safety
- Technical assistance: support.qiagen.com

Notes before starting

- For instrument and software installation, cartridge calibration, creating user profiles, creating a new process profile, and running analysis, see the *QIAxcel Connect System User Manual*.

Procedure

Preparing the gel cartridge and buffer tray

1. Allow the gel cartridge to equilibrate to room temperature (15–25°C) for at least 20 min.
2. Prepare the buffer tray:
 - a. Wash the buffer tray with hot water and rinse thoroughly with deionized water.
 - b. Fill the WP and WI positions each with 8 mL QX Wash Buffer and add 2 mL mineral oil.
 - c. Fill the buffer position with 18 mL QX Separation Buffer and add 4 mL mineral oil.
3. Place the buffer tray into the instrument.
4. Remove the QIAxcel cartridge from its packaging and carefully wipe off any soft gel debris from the metal capillary tips using a soft tissue.
5. **Important:** Remove the purge cap seal from the back of the cartridge (see Figure 1).
6. Place the cartridge into the instrument and insert the smart key. Refer to “Loading/Installing a QIAxcel gel cartridge and smart key” section of the *QIAxcel Connect System User Manual* or *QIAxcel Advanced User Manual*.



Figure 1. Removal of purge cap seal.



Figure 2. Buffer tray setup.

Optional: Prepare the QX Intensity Calibration Marker

1. When the QIAxcel DNA gel cartridge is being used for the first time, intensity calibration should be performed.
2. Load 15 μ L of the QX Intensity Calibration Marker in each tube of a 12-Tube strip (colored or non-colored).
3. Place the 12-Tube strip into position MARKER 2 of the buffer tray (see Figure 2).
4. Start the calibration from the Service environment of the software and acknowledge the calibration results afterwards (takes approx. 15 min). Refer to “Calibrating a cartridge” section of the *QIAxcel Connect System User Manual* or *QIAxcel Advanced User Manual*.

Prepare the QX DNA Alignment Marker

1. See “Choice of Alignment Marker and Size Marker” for choice of a QX DNA Alignment Marker and the consumable finder on the QIAxcel Connect webpage (www.qiagen.com/QIAxcelConnectSystem).
2. Load 15 μL of the alignment marker in each tube of a 12-Tube strip and add one drop of mineral oil to prevent evaporation.
3. Place the 12-Tube strip into position MARKER 1 of the buffer tray.

Prepare the DNA samples and QX DNA Size Marker

1. See “Choice of Alignment Marker and Size Marker” for choice of a QX DNA Size Marker and the consumable finder on the QIAxcel Connect webpage (www.qiagen.com/QIAxcelConnectSystem).
2. If required, dilute DNA samples with QX DNA Dilution Buffer. For each sample, pipet 6–10 μL of sample into a corresponding position of a 0.2 mL 12-Tube strip or a 96-well plate.
3. For samples diluted in QX DNA Dilution Buffer, we recommend diluting the DNA Size Marker to a final concentration of 20 ng/ μL in QX DNA Dilution Buffer. For undiluted DNA samples, we recommend diluting the QX DNA Size Marker to a final concentration of 20 ng/ μL in 1 \times sample buffer (e.g., PCR buffer).
4. Pipet 6–10 μL of diluted size marker into another position of the 12-Tube strip or 96-well plate.

Note: The minimum sample and size marker volume required for analysis is 6 μL with the QIAxcel Connect instrument and 10 μL for the QIAxcel Advanced instrument, the predecessor of QIAxcel Connect.

Note: If working with less than 10 μL of samples or size marker, or if the samples or markers are left in the instrument for prolonged time, add one drop of mineral oil.

Note: If analyzing less than 12 samples, fill empty positions with QX DNA Dilution Buffer to protect the capillaries from damage.

Perform the run

1. Switch on the QIAxcel instrument.
2. Switch on the computer linked to the instrument and open the QIAxcel ScreenGel[®] Software.
3. Log in to the software in the DNA mode and navigate to the **Process** environment.
4. **Optional:** Select a process profile from the drop-down list. Open the Run Parameters dialog box. Click **Preview** to check or change the pre-selected marker and sample positions in the Sample Row Selection panel. Skip step 5.
5. Open the Run Parameters dialog box. Add a run method and mark the rows containing samples by clicking the **Sample Row Selection** panel. If running the size marker side by side with the samples, define the position of the size marker by right-clicking the corresponding position.
6. Open the Sample Selection dialog box and name the experiment.
7. **Optional:** Open the Sample Information dialog box and name the samples.
8. Open the Run Check dialog box and confirm that samples and markers are loaded correctly. Click **Run** to start the run. For information on analysis settings, refer to *QIAxcel Connect System User Manual* or *QIAxcel Advanced User Manual*.

Choice of Alignment Marker and Size Marker

For optimal DNA fragment size determination with QIAxcel DNA High Resolution Kit or the QIAxcel DNA Screening Kit, select a QX Alignment and Size Marker close to your sample's fragment size. Ensure the target fragment size is smaller than the marker's largest peak. For example, for 100–400 bp fragments, use QX DNA Size Marker 25–500 bp and QX Alignment Marker 15/600 bp. See Table 1.

Table 1. Recommended QX DNA Size Marker and QX Alignment Marker combinations

Size marker	Cat. no.	Alignment marker	Cat. no.
QX DNA Size Marker 25 bp – 500 bp (50 µl)*	929560	QX Alignment Marker 15 bp/ 600 bp (1.5 ml)	929530
QX DNA Size Marker 50 bp – 800 bp (50 µl)	929561	QX Alignment Marker 15 bp/ 1 kb (1.5 ml)	929521
QX DNA Size Marker 100 bp – 2.5 kb (50 µl)	929559	QX Alignment Marker 15 bp/ 5 kb (1.5 ml)	929524
QX DNA Size Marker Large Fragment Kit 1 kb – 20 kb	929710	QX Alignment Marker 15 bp (1.5 ml), included in the Large Fragment Kit	n/a

* For DNA High Resolution cartridge only

Document Revision History

Date	Changes
05/2026	Initial release



Scan QR code for handbook.

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

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