April 2026

# RAS Extension Pyro® Kit Handbook

For quantitative measurement of mutations in exons 3 and 4 of the human *KRAS* oncogene, and exons 2, 3, and 4 of the human *NRAS* oncogene using PyroMark Q24, PyroMark Q24 Advanced, and PyroMark Q48 Autoprep

Sample to Insight

# Table of Contents

# Kit Contents

| **RAS Extension Pyro Kit**<br>**Catalog no.**<br>**Number of reactions** | **(24)**<br>**1088848**<br>**24** |
|---|---|
| Seq Primer KRAS 59/61 | 2 × 24 µL |
| Seq Primer KRAS 117 | 2 × 24 µL |
| Seq Primer KRAS 146 | 2 × 24 µL |
| Seq Primer NRAS 12/13 | 2 × 24 µL |
| Seq Primer NRAS 59 | 2 × 24 µL |
| Seq Primer NRAS 61 | 2 × 24 µL |
| Seq Primer NRAS 117 | 2 × 24 µL |
| Seq Primer NRAS 146 | 2 × 24 µL |
| PCR Primer KRAS 59/61 | 24 µL |
| PCR Primer KRAS 117 | 24 µL |
| PCR Primer KRAS 146 | 24 µL |
| PCR Primer NRAS 12/13 | 24 µL |
| PCR Primer NRAS 59 | 24 µL |
| PCR Primer NRAS 61 | 24 µL |
| PCR Primer NRAS 117 | 24 µL |
| PCR Primer NRAS 146 | 24 µL |
| PyroMark PCR Master Mix, 2× | 4 × 850 µL |
| CoralLoad® Concentrate, 10× | 1.2 mL |
| $H_2O$ | 6 × 1.9 mL |
| Unmethylated Control DNA, 10 ng/µL | 3 × 100 µL |

## Controls

Unmethylated Control DNA is included in the kit as a positive control for PCR and sequencing reactions. This control DNA has a wild-type genotype in the regions sequenced using this kit and is required for adequate result interpretation. Include a sample containing Unmethylated Control DNA for each assay in every Pyrosequencing® run. In addition, include a negative control (no template DNA) in every PCR setup for at least one assay.

# Shipping and Storage

The RAS Extension Pyro Kit is shipped on dry ice. PyroMark PCR Master Mix, CoralLoad Concentrate, Unmethylated Control DNA, and all primers should be stored at –30°C to –15°C upon arrival.

The RAS Extension Pyro Kit is stable until the kit expiration date when stored under these conditions.

# Intended Use

The RAS Extension Pyro Kit is intended for molecular biology applications. This product is not intended for the diagnosis, prevention, or treatment of a disease.

All due care and attention should be exercised in the handling of the products. We recommend all users of QIAGEN® products to adhere to the NIH guidelines that have been developed for recombinant DNA experiments, or to other applicable guidelines.

# Safety Information

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate safety data sheets (SDSs). These are available online in convenient and compact PDF format at **www.qiagen.com/safety**, where you can find, view, and print the SDS for each QIAGEN kit and components.

**CAUTION**

Always wear safety glasses, gloves, and a lab coat. The responsible body (e.g., laboratory manager) must take the necessary precautions to ensure that the surrounding workplace is safe and that the instrument operators are not exposed to hazardous levels of toxic substances (chemical or biological) as defined in the applicable Safety Data Sheets (SDSs) or OSHA,* ACGIH,† or COSHH‡ documents. Venting for fumes and disposal of waste must be in accordance with all national, state, and local health and safety regulations and laws.

* OSHA: Occupational Safety and Health Administration (United States of America).
† ACGIH: American Conference of Government Industrial Hygienists (United States of America).
‡ COSHH: Control of Substances Hazardous to Health (United Kingdom).

# Quality Control

In accordance with QIAGEN's ISO-certified Quality Management System, each lot of the RAS Extension Pyro Kit is tested against predetermined specifications to ensure consistent product quality.

# Introduction

## Principle and procedure

The RAS Extension Pyro Kit is used for quantitative measurement of mutations in exons 3 and 4 of the human *KRAS* gene, and exons 2, 3, and 4 of the human *NRAS* gene. The kit consists of eight assays (Figure 1).

The eight regions are amplified separately by PCR and sequenced across the defined region. Mutations in the covered region lead to distinct patterns in the Pyrogram® trace that are distinguishable from traces obtained from wild-type samples. The assays for *KRAS* codons 117 and 146, and *NRAS* codons 12/13, 59, 61, 117, and 146, are sequenced in the forward direction. The assay for *KRAS* codons 59/61 is sequenced in the reverse direction. The product consists of a PCR primer mix and a sequencing primer for each assay. The primers are delivered in solution, with each vial containing 24 µL of primer or primer mix.

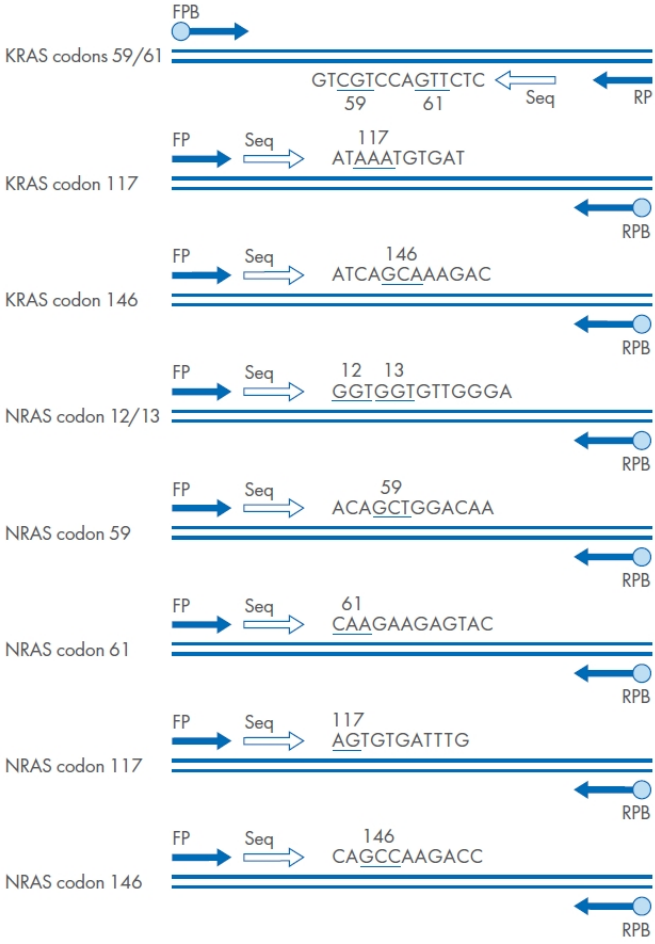


**Figure 1. Illustration of the *RAS* Extension assay.** The indicated sequence is the analyzed sequence for a wild-type sample. **FP**, forward PCR primers; **RP**, reverse PCR primers; **Seq**, sequencing primers. B behind the Primers indicates biotinylation.

# Equipment and Reagents to be Supplied by User

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, consult the appropriate safety data sheets (SDSs), available from the product supplier.

- DNA preparation reagents
- For further information on required equipment and reagents, refer to the user manual of the instrument being used:
    - PyroMark Q24: See Section 5.3, "Sample Preparation," in the *PyroMark Q24 User Manual* (**www.qiagen.com/HB-0240**).
    - PyroMark Q24 Advanced: See Section 5.3, "Sample and Reagent Preparation," in the *PyroMark Q24 Advanced User Manual* (**www.qiagen.com/HB-1341**).
    - PyroMark Q48 Autoprep: See the "Preparing Templates and Reagents" section in the *PyroMark Q48 Autoprep User Manual* (**www.qiagen.com/HB-1971**).

# Important Notes

- Create an Assay Setup as described below. This must only be done once, before running the *RAS* Extension Pyro assays for the first time (see "Protocol: Assay and Run Setup", page 18).
- Ensure that the reactions are thoroughly mixed and prepared and incubated at the recommended temperatures.
- The Sequencing Primer stock solution has a concentration of 10 µM.
    - **PyroMark Q24**: Mix 0.8 µL of undiluted Sequencing Primer stock solution (10 µM) with 24.2 µL Annealing Buffer to prepare 25 µL of a Sequencing Primer solution at a final concentration of 0.32 µM.
    - **PyroMark Q24 Advanced**: Mix 0.75 µL of undiluted Sequencing Primer stock solution (10 µM) with 19.25 µL Advanced Annealing Buffer to prepare 20 µL of a Sequencing Primer solution at a final concentration of 0.375 µM.
    - **PyroMark Q48 Autoprep**: Dilute the Sequencing Primer stock solution (10 µM) to a final concentration of 4 µM by mixing 0.8 µL Sequencing Primer stock solution with 1.2 µL Advanced Annealing Buffer for one reaction.
        - For manual sequencing primer loading, pipet 2 µL of diluted Sequencing Primer (4 µM) into each well.

          **Important**: Wait until the software prompts you to add the Sequencing Primer (4 µM). Do not pipet the Sequencing Primer (4 µM) into the wells in the beginning of the run. For more information, see *PyroMark Q48 Autoprep User Manual* (**www.qiagen.com/HB-1971**).
        - For automatic sequence primer loading, prepare higher volumes of diluted Sequencing Primer (4 µM), as required.

## Description of protocols

The first step is to amplify the target DNA by PCR, as described in "Protocol: PCR Using the PyroMark PCR Kit", page 14. The *RAS* Pyro Assay and Run should be set up while the PCR is running, following the instructions in "Protocol: Assay and Run Setup," page 18. After amplification, follow the protocols according to the respective instrument user manual to prepare the sequencing templates for Pyrosequencing analysis:

- *PyroMark Q24 User Manual* (**www.qiagen.com/HB-0240**): See Section 5.3, "Sample preparation," continuing from Section 5.3.3 "Immobilizing the PCR products to beads," and Section 5.4 "Preparation of PyroMark Gold Q24 Reagents."
- *PyroMark Q24 Advanced User Manual* (**www.qiagen.com/HB-1341**): See Section 5.3, "Sample and reagent preparation," continuing from Section 5.3.3, "Immobilizing the PCR products to beads."
- *PyroMark Q48 Autoprep User Manual* (**www.qiagen.com/HB-1971**): See "Preparing templates and reagents," continuing from Section 6.1.5, "Absorber strip".

Finally, perform the Pyrosequencing run and analyze the data according to the relevant instrument user manual:

- *PyroMark Q24 User Manual* (**www.qiagen.com/HB-0240**): See Section 5.5, "Processing a run on the PyroMark Q24 Instrument."
- *PyroMark Q24 Advanced User Manual* (**www.qiagen.com/HB-1341**): See Section 5.4, "Processing a run on the PyroMark Q24 Advanced."
- *PyroMark Q48 Autoprep User Manual* (**www.qiagen.com/HB-1971**): See "Starting a run" and Section 7, "PyroMark Q48 Autoprep Software".

# Protocol: PCR Using the PyroMark PCR Kit

This protocol describes the setup and cycling conditions for the amplification of DNA using the PyroMark PCR Master Mix (included in kit). The eight PCR products are subsequently used for detection of mutations in exons 3 and 4 of the human *KRAS* gene, and exons 2, 3, and 4 of the human *NRAS* gene by Pyrosequencing analysis.

## Important points before starting

- See the *PyroMark PCR Kit Handbook* (**www.qiagen.com/HB-3794**) for more detailed information.
- HotStarTaq® DNA Polymerase requires an activation step of 15 min at 95°C (step 5 of the protocol).
- Set up all reaction mixtures in an area separate from areas used for DNA preparation or PCR product analysis.
- Use disposable tips containing hydrophobic filters to minimize cross-contamination.
- Before opening the tubes containing PCR primers, spin briefly to collect contents at the bottom of the tubes.
- Adjust the concentration of the control and sample DNA, if necessary, to 0.4–2 ng/µL.

## Procedure

1. Thaw the PyroMark PCR Master Mix, CoralLoad Concentrate, and primer solutions.

   **Important**: Mix the solutions before use to avoid localized concentrations of salt.

2. Prepare a reaction mix for each PCR primer set according to Table 1.

**Table 1. Preparation of reaction mix for each PCR primer mix**

| Component of reaction mix | Volume (µL) per reaction |
|---|---|
| PyroMark PCR Master Mix, 2 | 12.5 |
| CoralLoad Concentrate, 10× | 2.5 |
| PCR Primer *KRAS* 59/61 or<br>PCR Primer *KRAS* 117 or<br>PCR Primer *KRAS* 146 or<br>PCR Primer *NRAS* 12/13 or<br>PCR Primer *NRAS* 59 or<br>PCR Primer *NRAS* 61 or<br>PCR Primer *NRAS* 117 or<br>PCR Primer *NRAS* 146 | 1 |
| RNase-free water | 4 |
| **Total volume** | **20** |

3. Gently pipet the reaction mixture up and down to mix thoroughly, and dispense 20 µL into each PCR tube. It is not necessary to keep PCR tubes on ice, as HotStarTaq DNA Polymerase is inactive at room temperature.

4. Add 5 µL template DNA (2–10 ng of genomic DNA) to the individual PCR tubes, and mix thoroughly.

   **Note**: Include a negative control sample (without template DNA) in every PCR setup for at least one assay. In addition, include a sample containing Unmethylated Control DNA for each assay in every Pyrosequencing run (see "Controls," page 4).

5. Program the thermal cycler according to Table 2.

**Table 2. Optimized cycling protocol for PyroMark PCR Master Mix**

| | Time | Temperature (°C) | Notes |
|---|---|---|---|
| **Initial PCR activation step** | 15 min | 95 | HotStarTaq DNA Polymerase is activated by this heating step |
| **3-step cycling** | | | |
| Denaturation | 20 s | 95 | |
| Annealing | 30 s | 53 | |
| Extension | 20 s | 72 | |
| **Number of cycles** | | | **42** |
| **Final extension** | 5 min | 72 | |
| **Hold** | ∞ | 4 | |

6. Place the PCR tubes in the thermal cycler and start the cycling program.

   **Note**: After amplification, samples can be stored overnight at 2–8°C. For longer storage store at –30°C to –15°C.

7. Use 10 µL of PCR product for subsequent Pyrosequencing analysis. We recommend checking the PCR product before Pyrosequencing analysis, for example, by rapid analysis on the QIAxcel® system or by agarose gel analysis. See the *PyroMark PCR Kit Handbook* (**www.qiagen.com/HB-3794**) for details. The amplicon length for each assay of the RAS Extension Pyro Kit are listed in Table 3 below.

**Table 3. Amplicon length of all *RAS* Extension assays in base pairs**

| Assay | Amplicon length (bp) |
|---|---|
| *KRAS* 59/61 | 125 |
| *KRAS* 117 | 77 |
| *KRAS* 146 | 114 |
| *NRAS* 12/13 | 106 |
| *NRAS* 59 | 67 |
| *NRAS* 61 | 114 |
| *NRAS* 117 | 92 |
| *NRAS* 146 | 75 |

8. Proceed to “Protocol: Assay and Run Setup,” next page.

# Protocol: Assay and Run Setup

These protocols are for setting up the assay parameters and creating a Run Setup for mutation analysis in *KRAS* and *NRAS*.

Use default settings in the software for all assay setups if not otherwise stated.

## Procedure

1. Set up the RAS extension assays by selecting **New AQ** Assay in the PyroMark Q24, PyroMark Q24 Advanced, or PyroMark Q48 Autoprep Software.
2. Table 4 shows the "Sequence to Analyze" for eight *KRAS* and *NRAS* assays. Type the assay-specific sequence in the "Sequence to Analyze" field of the software.

   **Note**: The "Sequence to Analyze" can also be modified after the run (if not locked) to analyze for mutations at different positions in the *KRAS* and *NRAS* gene. To reanalyze and target additional mutations, go to **Analysis Setup** and change the default "Sequence to Analyze" to one of the additional "Sequence to Analyze" listed in Table 5 and Table 6. Click **Apply**, and then click **To All** when the Apply Analysis Setup window appears.

   **Note**: We strongly recommend reanalyzing all samples with no mutation detected using the standard "Sequence to Analyze", as well as samples that received a "Check" or "Failed" quality assessment or show peaks that do not match the height of the histogram bars. "Check" and "Failed" quality assessments may indicate a mutation that is not addressed by the standard "Sequence to Analyze", resulting in peak height deviations.
3. Manually enter the assay-specific "Dispensation Order" from Table 4.

   **Note**: Do not use the **Generate Dispensation Order** button. Both "Sequence to Analyze" and "Dispensation Order" must be entered in manually.

Click the **Analysis Parameters** tab and ensure that the **A peak reduction factor** is set to 0.86 for analysis of *NRAS* codon 61.

4. Click the toolbar, and save the assay as *KRAS 59/61*, *KRAS 117*, *KRAS 146*, *NRAS 12/13*, *NRAS 59*, *NRAS 61*, *NRAS 117*, or *NRAS 146*.

**Table 4. Assay setup: "Sequence to analyze" and "Dispensation order" for the eight *RAS* Extension Pyro assays**

| Assay | Sequence to analyze | Dispensation order |
|---|---|---|
| KRAS 59/61 | CTCDTGACCTGCTGT | GCTCAGTCAGACTAGCATGA |
| KRAS 117 | ATAAHTGTGA | GATGACTCGTG |
| KRAS 146 | ATCAVCAAAGA | GATCAGCTGAGC |
| NRAS 12/13 | GNTGNTGTTGGGAAAAGC | TACGACTCAGCATCGTAGAG |
| NRAS 59 | ACAGNTGGAC | TGACTAGCATGA |
| NRAS 61 | CNAGAAGAGTA | TCGTATCGAGAG |
| NRAS 117 | ABTGTGATTT | GACGTGTGA |
| NRAS 146 | CANCCAAGACCA | GCAGTCAGAC |

**Table 5. Common mutations in the human *KRAS* gene detected by the RAS Extension Pyro Kit with respective "Sequence to analyze"**

| Nucleic acid substitution | Amino acid substitution | Cosmic ID (V70) | Sequence to analyze |
|---|---|---|---|
| **KRAS Codon 59 (GCA)** | | | |
| 175G>A | A59T | 546 | CTCTTGACCTGNTGT |
| 176C>G | A59G | 28518 | CTCTTGACCTNCTGT |
| **KRAS Codon 61 (CAA)** | | | |
| 183A>C* | Q61H | 554 | CTCDTGACCTGCTGT |
| 182A>T* | Q61L | 553 | CTCTHGACCTGCTGT |

**Table 5. Common mutations in the human KRAS gene detected by the RAS Extension Pyro Kit with respective "Sequence to analyze" (continued)**

| Nucleic acid substitution | Amino acid substitution | Cosmic ID (V70) | Sequence to analyze |
|---|---|---|---|
| 182A>G* | Q61R | 552 | CTCTHGACCTGCTGT |
| 183A>T* | Q61H | 555 | CTCDTGACCTGCTGT |
| 181C>G* | Q61E | 550 | CTCTTSACCTGCTGT |
| **KRAS Codon 117 (AAA)** | | | |
| 351A>C* | K117N | 19940 | ATAAHTGTGA |
| 351A>T* | K117N | 28519 | ATAAHTGTGA |
| **KRAS Codon 146 (GCA)** | | | |
| 436G>A* | A146T | 19404 | ATCAVCAAAGA |
| 436G>C | A146P | 19905 | ATCAVCAAAGA |
| 437C>T* | A146V | 19900 | ATCAGBAAAGA |

* For these mutations, the ability to detect different mutation frequencies on the PyroMark Q48 Autoprep was validated.

**Table 6. Common mutations in the human *NRAS* gene detected by the RAS Extension Pyro Kit with respective "Sequence to analyze"**

| Nucleic acid substitution | Amino acid substitution | Cosmic ID (V70) | Sequence to analyze |
|---|---|---|---|
| **NRAS Codon 12 (GGT)** | | | |
| 34G>A* | G12S | 563 | NGTNGTGTTGGGAAAAGC |
| 34G>T | G12C | 562 | NGTNGTGTTGGGAAAAGC |
| 34G>C | G12R | 561 | NGTNGTGTTGGGAAAAGC |
| 35G>A* | G12D | 564 | GNTGNTGTTGGGAAAAGC |
| 35G>T | G12V | 566 | GNTGNTGTTGGGAAAAGC |

**Table 6. Common mutations in the human NRAS gene detected by the RAS Extension Pyro Kit with respective "Sequence to analyze" (continued)**

| Nucleic acid substitution | Amino acid substitution | Cosmic ID (V70) | Sequence to analyze |
|---|---|---|---|
| 35G>C | G12A | 565 | GNTGNTGTTGGGAAAAGC |
| **NRAS Codon 13 (GGC)** | | | |
| 37G>A | G13S | 571 | NGTNGTGTTGGGAAAAGC |
| 37G>T | G13C | 570 | NGTNGTGTTGGGAAAAGC |
| 37G>C | G13R | 569 | NGTNGTGTTGGGAAAAGC |
| 38G>A* | G13D | 573 | GNTGNTGTTGGGAAAAGC |
| 38G>T | G13V | 574 | GNTGNTGTTGGGAAAAGC |
| 38G>C | G13A | 575 | GNTGNTGTTGGGAAAAGC |
| **NRAS Codon 59 (GCT)** | | | |
| 175G>A | A59T | 578 | ACAVCTGGAC |
| 176C>G | A59G | – | ACAGNTGGAC |
| **NRAS Codon 61 (CAA)** | | | |
| 181C>A* | Q61K | 580 | VAAGAAGAGTA |
| 182A>G* | Q61R | 584 | CNAGAAGAGTA |
| 182A>T* | Q61L | 583 | CNAGAAGAGTA |
| 183A>T | Q61H | 585 | CANGAAGAGTA |
| 183A>C | Q61H | 586 | CANGAAGAGTA |
| 183A>G | Q61Q | 587 | CANGAAGAGTA |
| **NRAS Codon 117 (AAG)** | | | |
| 351G>C* | K117N | – | ABTGTGATTT |
| 351G>T* | K117N | – | ABTGTGATTT |

**Table 6. Common mutations in the human NRAS gene detected by the RAS Extension Pyro Kit with respective "Sequence to analyze" (continued)**

| Nucleic acid substitution | Amino acid substitution | Cosmic ID (V70) | Sequence to analyze |
|---|---|---|---|
| **NRAS Codon 146 (GCC)** | | | |
| 436G>A | A146T | 27174 | CANCCAAGACCA |
| 436G>C | A146P | – | CANCCAAGACCA |
| 437C>T* | A146V | – | CAGBCAAGACCA |

* For these mutations, the ability to detect different mutation frequencies on the PyroMark Q48 Autoprep was validated.

## Run setup

1. Create a new run file by select **New Run**.
2. Setup the plate by adding the assays to selected wells.
3. Proceed with the Run Setup, preparation of samples and run according to the instructions in *PyroMark Q24 User Manual*, *PyroMark Q24 Advanced User Manual*, or *PyroMark Q48 Autoprep User Manual*.

# Troubleshooting Guide

This troubleshooting guide may be helpful in solving any problems that may arise. For more information, see also the Frequently Asked Questions page at our Technical Support Center: **www.qiagen.com/FAQ/FAQList.aspx** (for contact information, visit **www.qiagen.com**).

Refer to the user manual for the PyroMark instrument which is used.

- When using PyroMark Q24, see Section 7, "Troubleshooting Guide," in the *PyroMark Q24 User Manual*.
- When using PyroMark Q24 Advanced, see Section 7, "Troubleshooting Guide," in the *PyroMark Q24 Advanced User Manual*.
- When using PyroMark Q48 Autoprep, see Section 9, "Troubleshooting Guide," in the *PyroMark Q48 Autoprep User Manual*.
- For an assay-specific Troubleshooting Guide, see "Troubleshooting Guide," in the *RAS Extension Pyro Handbook* for PyroMark Q24 (**www.qiagen.com**).

# Contact Information

For technical assistance and more information, please see our Technical Support Center at **support.qiagen.com** or contact one of the QIAGEN Technical Service Departments or local distributors (visit **support.qiagen.com**).

# Ordering Information

| Product | Contents | Cat. no. |
|---|---|---|
| **Assays & Controls** | | |
| RAS Extension Pyro Kit | For 24 reactions: Forward primer, Reverse primer, and Sequencing primer for the mutation analysis of *KRAS* and *NRAS* using the PyroMark Q24, PyroMark Q24 Advanced, or PyroMark Q48 Autoprep | 970590<br>1088848 |
| PyroMark Control Oligo | For installation check of the system | 979203 |
| **PyroMark Q24** | | |
| PyroMark Q24 | Instrument, for laboratory use only | 9001514 |
| PyroMark Q24 Software | Analysis software, for laboratory use only | 9019062 |
| **PyroMark Q24 Advanced** | | |
| PyroMark Q24 Advanced CpG Reagents (4 × 24) | For 4 × 24 samples for use on the PyroMark Q24 Advanced: Enzyme Mixture, Substrate Mixture, Buffers, and Nucleotides for CpG and long-read sequencing runs | 970922 |
| PyroMark Q24 Advanced | Instrument, software, and installation for advanced Pyrosequencing analysis of 24 samples in parallel | 9002270 |
| **PyroMark Q48 Autoprep** | | |
| PyroMark Q48 Autoprep | Instrument, software, and pipette | 9002470 |
| PyroMark Q48 Discs (50) | 50 discs for running PyroMark Q48 Autoprep reactions | 974901 |
| PyroMark Q48 Absorber Strips (100) | 100 absorber strips for running PyroMark Q48 Autoprep reactions | 974912 |
| PyroMark Q48 Autoprep Starter Kit | PyroMark Q48 Magnetic Beads (300), PyroMark Q48 Advanced CpG Reagents (4 × 48), PyroMark Control Oligo, PyroMark Q48 Discs (50) and PyroMark Q48 Absorber Strips (100) | 974230 |
| PyroMark Q48 Advanced Reagents (4 × 48) | Reagents for 4 × 48 PyroMark Q48 Autoprep standard reactions | 974002 |
| PyroMark Q48 Advanced CpG Reagents (4 × 48) | Reagents for 4 × 48 PyroMark Q48 Autoprep CpG and long-read reactions | 974022 |

| Product | Contents | Cat. no. |
|---|---|---|
| PyroMark Q48 Magnetic Beads (300) | Magnetic streptavidin-coated Sepharose beads for running 300 PyroMark Q48 Autoprep reactions | 974203 |

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at **www.qiagen.com** or can be requested from QIAGEN Technical Support or your local distributor.

# Document Revision History

| Date | Description |
| --- | --- |
| 04/2026 | Initial release |

### Limited License Agreement for RAS Extension Pyro V2 Kit

Use of this product signifies the agreement of any purchaser or user of the product to the following terms:

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