

One-Step Kits

Streamlined and Simple



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One-Step Pathway to Efficiency

Life Science Laboratories around the world are increasing their work in the areas of nucleic acids (DNA, RNA), proteins, and gene expression, and the number of samples being processed in these labs is enormous. Researchers are motivated to find simpler, faster solutions for processing their large numbers of samples. To satisfy high throughput requirements of RNA detection and quantification, labs are moving to "One Step" reaction kits. These One-Step kits provide simplicity and speed in converting RNA samples to cDNA (this is called Reverse Transcription) then to DNA amplification all in one reaction tube. There are a few types of popular One-Step kits available to molecular labs:

1. End Point RT-PCR: Reverse Transcription and then standard end point PCR in one reaction tube.



2. Real Time RT qPCR: Reverse Transcription & qPCR in one reaction tube. 2 types are:

- Fluorescent (SYBR) Detection
- Probe Detection



One-Step Kit Applications

There are a wide range of uses for One-Step kits. Gene expression analysis is one of the most popular, and this entails converting mRNA (messenger RNA) to DNA and then using primers to amplify specific genes (sections of DNA) of interest. This process allows a researcher to detect and quantify the amount of specific RNA targets in the starting samples, with higher levels of RNA indicating higher levels of gene expression within a cell. Another application is viral detection, as many viruses have RNA as their genetic material. In this application viral RNA can be transcribed to DNA, amplified and detected.

Gene Expression in Cancer Research

Studying mRNA levels in cancer cells is common in the field of molecular oncology, and can help researchers detect and understand the activity in different types of cancer. Normally functioning cells will have a normal baseline levels of mRNA production, but when there are genetic abnormalities, such as cancer, the mRNA levels will change. Using One-Step RT-qPCR, scientists are able to efficiently quantify genetic expression in tumors and understand more about the underlying problems at a molecular level. Studying mRNA levels in cancerous cells can enable early diagnosis and early treatment options for patients.

Detecting COVID-19 Virus

During the current COVID-19 pandemic, *One-Step RT-qPCR* has become the go-to method for molecular detection of the virus in patient nasopharyngeal samples. A sample is taken from a patient and viral RNA is extracted. This RNA is the input for the *One-Step RT-qPCR* reaction which transcribes the RNA to cDNA and then specific primer/probes in the reaction will enable targeted amplification and detection of gene sequences of the COVID-19 virus.



Accuris™ One-Step RT-qPCR Mix
cDNA Synthesis and qPCR in a single tube

Accuris offers End Point One-Step and Real Time One-Step kits as well as a full line of PCR reagents.

Contact us for more info!

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