Develop COVID-19 Tests with No Sample Extraction

Inhibitor-Tolerant RT-qPCR Mix
Works in sputum, saliva and stool

SUITABLE APPLICATIONS

- Human Diagnostics
- Vet Health
- Environmental

In an RT-qPCR test, the RNA extraction step is a time limiting step and RNA can be lost during the extraction process reducing the performance of the assay. However, extraction is typically required to remove inhibitors which would otherwise impact and assay's sensitivity and accuracy.

In order to address this challenge, Meridian has developed an Inhibitor-Tolerant RT-qPCR Mix capable of delivering sensitive multiplex detection, even in the presence of difficult inhibitors found in sputum, saliva and stool specimens. This new mix offers a novel alternative to nucleic acids extraction, saving both time and labor which are vitally important in viral screening assays that require rapid detection for infection control.

The formulation is supplied as a concentrated (4x) mix in order to maximize sample input volume and aiding in low copy number detection. In addition, the one-tube format of Meridian's Inhibitor-Tolerant RT-qPCR Mix simplifies the optimization and reaction set-up.

Product Highlights

- Designed for crude samples without the need for complex or time consuming extraction
- 4x concentration master mix allows for greater sample volume
- All-in-one simple to use one-step mix. Only add primers, probes and clinical samples
- Suitable for single and multiplex detection of RNA and DNA pathogens

PRODUCT	CAT NO.	VOLUME	REACTIONS
Inhibitor-Tolerant RT-qPCR Mix	MDX016	5 mL	1,000 Rxn
		50 mL	10,000 Rxn

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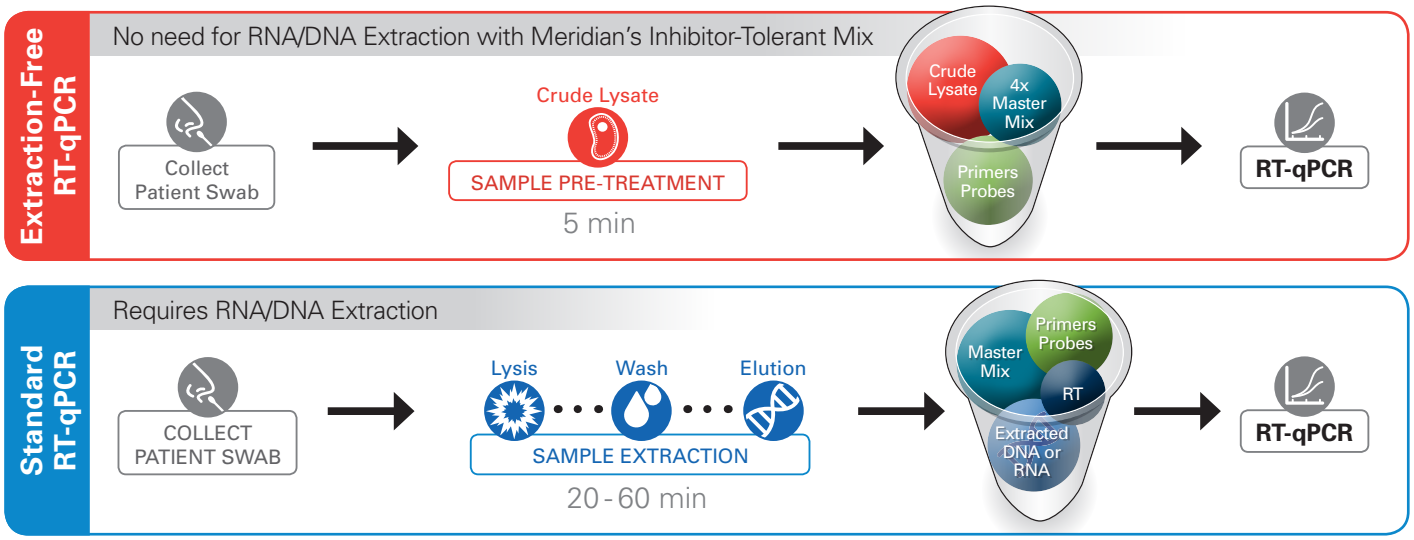
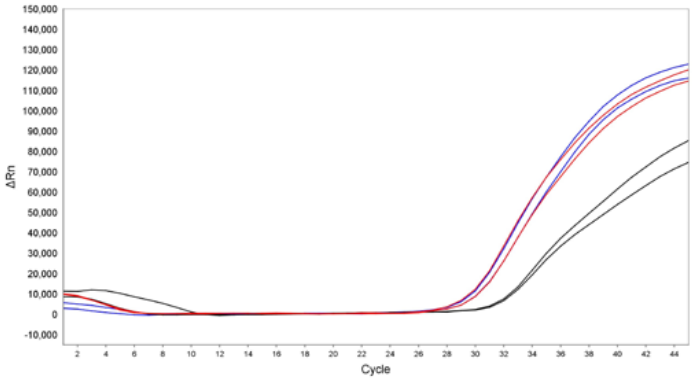
Product Workflow



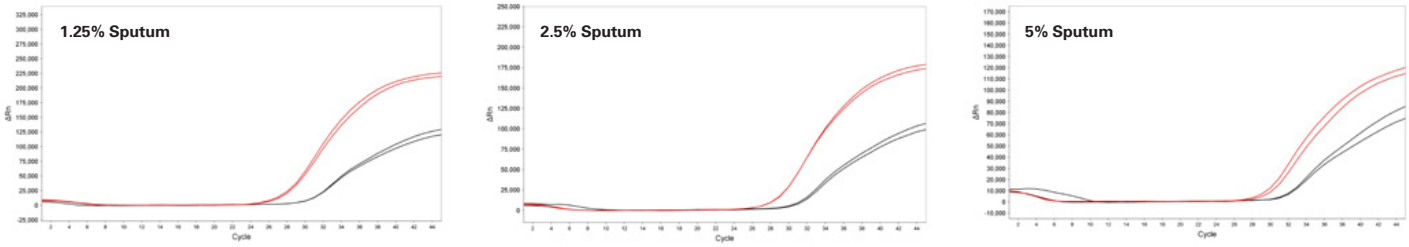
Product Data

Inhibitor-Tolerant RT-qPCR Mix exhibits a high tolerance to PCR inhibitors from clinical samples

SPUTUM SPECIMENS

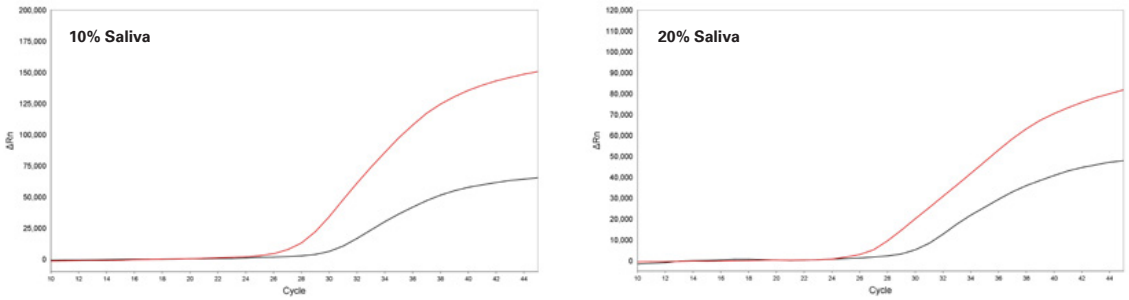


Amplification profile of inactivated influenza virus spiked into samples containing 5% sputum or no sputum. The data illustrates that the performance of Inhibitor-Tolerant RT-qPCR Mix (MDX016) in the presence of 5% artificial sputum (red) is the same Fast One-Step RT-qPCR Mix (MDX032) with no sputum (blue). In contrast, the sensitivity and performance of Fast One-Step RT-qPCR Mix (MDX032) significantly decreases in the presence of 5% artificial sputum (**black**) compared to no sputum or compared to Inhibitor-Tolerant RT-qPCR Mix (MDX016) with sputum.



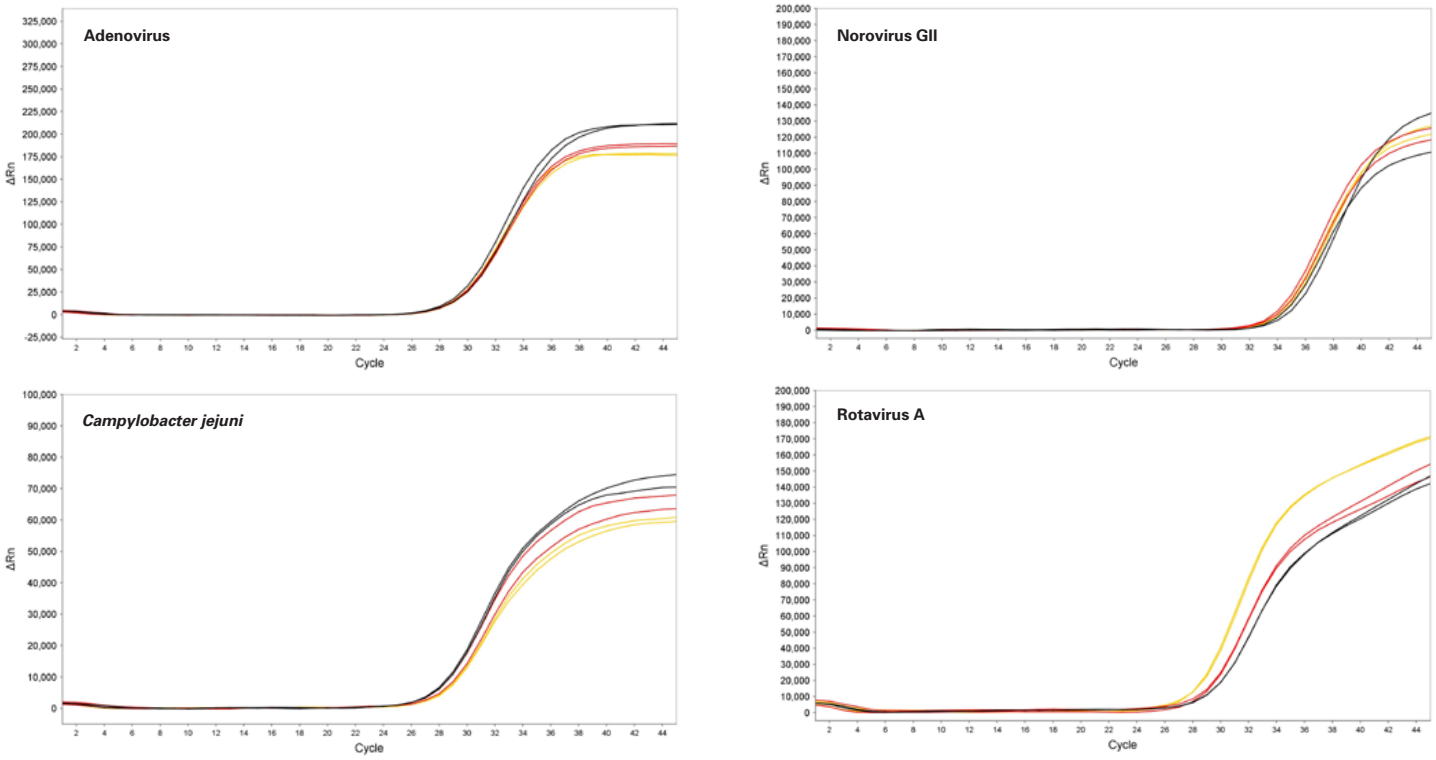
Amplification profiles of inactivated influenza virus spiked into samples containing various concentrations of sputum (1.25% - 5%). Results demonstrate that MDX016 (red) exhibits a higher tolerance to inhibitors present in artificial sputum (Kirchner, S. *et al. J Vis Exp* (64) 2012) compared to the standard Fast One-Step RT-qPCR Mix MDX032 (**black**).

SALIVA SPECIMENS



MDX016 (red) and MDX032 (**black**) amplification traces of Influenza A spike in presence of saliva swabs (COPAN ESwab 359C) at 10% (left) and 20% (right) final concentration. With earlier Ct (approx. 4 Ct) and higher fluorescence (approx. +50%), the results demonstrate the superiority of Inhibitor-Tolerant RT-qPCR Mix (MDX016) against a standard RT-qPCR Mix (MDX032) for the detection of viral RNA in presence of saliva swab resuspension in UTM.

STOOL SPECIMENS



Amplification profiles of 4 pathogens (RNA: Norovirus and Rotavirus, DNA: Adenovirus, *C. jejuni*) in a multiplex reaction containing 5% (yellow), 10% (red) and 20% (**black**) stool extract. The results demonstrate the multiplexing capability of MDX016 in the presence of inhibitors found in stool (up to 20% final volume).

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