

## DBdirect™ RT-PCR Probe Mix SuperSens DB-1267

### General description

DBdirect™ RT-PCR Probe Mix SuperSens One-Step RT-qPCR system is designed for use in TaqMan probe-based, super sensitive real-time quantification of RNA transcripts and viral RNA. Thanks to an outstanding antibody-mediated, hot-start Taq DNA polymerase, this mix is capable of single copy target detection even in challenging multiplexes, which tend to create primer-dimers. DBdirect™ RT-PCR Probe Mix SuperSens further contains a thermostable reverse transcriptase (mutated M-MLV), RNase inhibitors, dNTPs, MgCl<sub>2</sub>, enhancers and stabilizers.

DBdirect™ RT-PCR Probe Mix SuperSens is suitable for ultrasensitive detection in purified RNA, which can be prepared either manually or automatically using standard column based or magnetic bead bases approaches. Its proprietary composition allows also for direct detection of RNA in biological matrices such as human serum, saliva, or cell cultivation media (user must validate its use in his/her application; example of direct detection of viral RNA in cell culture is described in [10.1021/acsinfecdis.0c00829](https://doi.org/10.1021/acsinfecdis.0c00829)).

We provide multiple RT-PCR mixes optimized for various applications, including direct detection from biological samples without nucleic acid extraction. Please use the chart “RT-PCR Mixes” at <https://www.dianabiotech.com/enzymes/> for selection of the optimal RT-PCR mix for your application.

### Applications and Features

Use of DBdirect™ RT-PCR Probe Mix SuperSens is designed for research studies and recommended in all applications with probe-based RT-PCR settings, both in single-plex and multiplex reactions.

- One step quantitative real-time RT-PCR from RNA, cDNA, or DNA.
- Robustness: both isolated nucleic acids or biological matrices (human serum, saliva) or cell cultivation media can be used as a starting material for (RT-)PCR
- Sensitivity: detects low copy number targets in single or multiplex with TaqMan probes. Excellent results also with set of primers and probes creating primer-dimers and/or primer-probe-dimers.
- Easy to use design: features two components mixed in 1:1 ratio and then primer/probe solution and sample are added.
- Stability: prepare your reaction at laboratory temperature (25 °C) without the need for mixing on ice.
- Proven: this system has been used as a basis in millions of diagnostic tests against COVID-19 including for direct detection from samples of human saliva, or standard collection media without the need for a previous RNA isolation step.
- Compatible with common RT-PCR instruments (BioRad CFX, BioRad CFX Opus, Roche LightCycler® 480 II, Roche LightCycler 96, MIC, RotorGene, Thermo QuantStudio and others...).



## Kit Components

Kit component	REF code	Volume (µL)			Storage temperature	Cap colour
		100 rxns	1000 rxns	5000 rxns		
Enhancer mix (4x) SuperSens	RF07975	500	5 000	5 x 5 000	-20 °C	
DBdirect™ RT-PCR Enzyme mix (4x) SuperSens	RF01034	500	5 000	5 x 5 000	<b>-80 °C</b>	
PCR grade water	RF08842	1 000	10 000	5 x 10 000	-20 °C	

Reaction preparation: mix 5 µL of Enhancer mix (4x) SuperSens and 5 µL of DBdirect™ RT-PCR Enzyme mix (4x) SuperSens and add primers and probe(s) diluted in PCR grade water. Then add the sample (maximum volume to be added up to final reaction volume of 20 µL) and add PCR grade water to final volume of 20 µL. Master mix from Enhancer mix (4x) SuperSens and DBdirect™ RT-PCR Enzyme mix (4x) SuperSens can be prepared for multiple reactions in advance, it is stable for up to 8 hours at laboratory temperature (25 °C) or up to 24 hours at 4 °C.

## Quality Control

For each lot, the activity of the enzymes is tested and detection of a low copy number target in multiplexed assay in selected biological matrices (human saliva, serum) is tested. For each lot, the activity of RNases and DNases is also tested.

Each lot is also assayed for *E. coli* genomic DNA. Trace amounts can be present in the kit and therefore is not suitable for detecting low copy number of *E. coli* in your sample.

## Storage

Keep DBdirect™ RT-PCR Enzyme mix (4x) SuperSens at -80 °C for long-term storage. Enhancer mix (4x) SuperSens and PCR grade water can be stored at -20 °C. Avoid repeated freezing/thawing, do not exceed four cycles. If you intend to use the components more than once, aliquot them after the first thawing.

All components can be stored separately at 4 °C for up to 2 weeks after the first thawing. However, using the components as soon as possible after thawing and preparing fresh Master mix is recommended.

**Shelf life:** 2 years

**Shipment:** Dry ice

## Products

Catalogue No	Size
DB-1267-100rxns	100 x 20 µL reaction
DB-1267-1000rxns	1 000 x 20 µL reaction
DB-1267-5000rxns	5 000 x 20 µL reaction

