DB-1271 DBdirect™ PCR SYBR Mix
DB-1274 DBdirect™ PCR SYBR Mix SuperSens

General description

DBdirect™ PCR SYBR Mix and DBdirect™ PCR SYBR Mix SuperSens contain SYBR™ Green I dye for real-time quantification of DNA sequences. This can be done not only from a purified template but also directly from a range of sample types, without the need for TaqMan probes. Both mixes further contain hot-start Taq DNA polymerase (aptamer-mediated in DBdirect™ PCR SYBR Mix, and antibody-mediated in DBdirect™ PCR SYBR Mix SuperSens, dNTPs, $MgCl_2$, enhancers and stabilizers.

DBdirect™ PCR SYBR Mix and DBdirect™ PCR SYBR Mix SuperSens are well-suited for sensitive, resp. ultrasensitive detection in purified DNA. The DNA can be purified either manually or automatically using standard column-based or magnetic bead-based approaches. Its unique composition also enables the direct detection of DNA in human, bacteria (both gram-positive and gram-negative), viruses (both enveloped and non-enveloped), or direct detection of DNA in different biological matrices such as human serum, saliva, or cell cultivation media (user must validate its use in his/her application). It is also possible to detect DNA from single cells, but a separate preincubation step is needed for some cell types to achieve enough sensitivity. For more information, please refer to the application notes on the product website, which will be updated on a regular basis.

The non-specific nature of SYBR™ Green I dye does not allow for differential detection of multiple targets in one reaction: these mixes are suitable for the detection of a single target in one reaction (monoplex detection), or they can be used for the detection of multiple targets, but they cannot be discriminated from each other during PCR reaction. Melting analysis after the amplification can be run to examine the specificity of amplification.

Please use the chart “PCR Mixes” at https://www.dianabiotech.com/enzymes/ for selection of the optimal PCR SYBR mix for your application. You will also find information about our other PCR mixes optimized for various applications, including mixes suitable for multiplex probe-based qPCR or mixes for direct loading of the PCR product on a gel.

Applications and Features

The use of DBdirect™ PCR SYBR Mix and DBdirect™ PCR SYBR Mix SuperSens is designed for research studies and recommended for all applications with SYBR-based PCR settings.

- Quantitative real-time PCR from cDNA, genomic DNA (also for genotyping), or plasmid DNA.
- Preparation of DNA product for T/A cloning (Taq DNA polymerase adds a single A onto the ends of the PCR product).
- Robustness: both purified nucleic acids or various types of cells (human, bacterial, viral), biological matrices (human serum, saliva) or cell cultivation media can be used as a starting material for PCR.
- Sensitivity: detects low copy number targets only with a set of primers, no probe is needed.
- Multiplexing with passive reference dye (typically ROX) is possible (ROX dye is not included in kit components).
- Easy to use design reduces the pipetting steps and therefore the risk of contamination: add primer solution and sample straight to the PCR mix and start PCR.

- Ideal for routine and high-throughput PCR (melting analysis after the amplification can be run to examine the specificity of amplification).
- Stability: prepare your reaction at laboratory temperature (up to 25 °C) without the need for mixing on ice.
- Compatible with common PCR instruments (BioRad CFX, BioRad CFX Opus, Roche LightCycler® 480 II, Roche LightCycler 96, MIC, RotorGene, Thermo QuantStudio and others…).

Kit Components

DB-1271 DBdirect™ PCR SYBR Mix

Kit component	REF code	Volume (µL)			Storage temperature	Cap colour + label
		100 rxns	1000 rxns	5000 rxns		
PCR SYBR mix (2x)[1)]	RF09982	1 000	10 000	5 x 10 000	≤ -18 °C	2x
PCR grade water	RF08842	1 000	10 000	5 x 10 000	≤ -18 °C	W

[1)] Keep the component away from light.

DB-1274 DBdirect™ PCR SYBR Mix SuperSens

Kit component	REF code	Volume (µL)			Storage temperature	Cap colour + label
		100 rxns	1000 rxns	5000 rxns		
PCR SYBR mix SuperSens (2x) [1)]	RF00683	1 000	10 000	5 x 10 000	≤ -18 °C	2x
PCR grade water	RF08842	1 000	10 000	5 x 10 000	≤ -18 °C	W

[1)] Keep the component away from light.

Reaction preparation: add primers diluted in PCR grade water into the PCR SYBR mix (2x) or PCR SYBR mix SuperSens (2x). 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. Work with PCR SYBR mix (2x) at laboratory temperature (up to 25 °C) for as short a time as possible. PCR SYBR mix SuperSens (2x) is stable for up to 1 week in this condition.

Quality Control

For each lot, the activity of Taq DNA polymerase is tested and detection of a low copy number target with amplicon length of 600 bps in challenging matrix (viral transport medium) is tested. For each lot, the activity of DNases is also tested.

Each lot is also assayed for *E. coli* genomic DNA (gDNA). In DBdirect™ PCR SYBR Mix SuperSens Kit, amount of *E. coli* gDNA is usually not detectable and this kit is thus suitable for applications where *E. coli* gDNA may interfere. On the other hand, low amounts are usually detected in DBdirect™ PCR SYBR Mix Kit.

Storage

Keep all components at ≤ -18 °C for long-term storage. 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.

PCR SYBR mix (2x) and PCR SYBR mix SuperSens (2x) can be stored (in dark) at 4 °C for up to 4 weeks after the first thawing. However, using the component as soon as possible after thawing is recommended.

Shelf life: 2 years

Shipment: Dry ice

Products

DB-1271 DBdirect™ PCR SYBR Mix

Catalogue No	Size
DB-1271-100rxns	100 x 20 µL reaction
DB-1271-1000rxns	1 000 x 20 µL reaction
DB-1271-5000rxns	5 000 x 20 µL reaction

DB-1274 DBdirect™ PCR SYBR Mix SuperSens

Catalogue No	Size
DB-1274-100rxns	100 x 20 µL reaction
DB-1274-1000rxns	1 000 x 20 µL reaction
DB-1274-5000rxns	5 000 x 20 µL reaction

Disclaimer

For research use only.

It is the user´s responsibility to validate the specific use of the kit.

To the fullest extent permitted by the laws of your jurisdiction, DIANA Biotechnologies, a.s., shall not be liable for any direct or indirect damages associated with or arising out of this document and its use, or for any direct or indirect damages associated with or arising out of the DBdirect™ PCR SYBR Mix Kit or DBdirect™ PCR SYBR Mix SuperSens Kit and their use.