



# Molecular Biology Reagents



## MULTIDISCIPLINARY EXPERTISE

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Founded in 2018 as an academic spin-off based on unique DIANA technology for drug discovery and diagnostics, bringing deep expertise in molecular biology, chemistry and informatics. All operations are based in the heart of Europe: Prague, Czech Republic.



## BREAKTHROUGH PCR DIAGNOSTICS

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Our ultra-high throughput PCR COVID-19 tests gained over 40% of the Czech market. The key to this success lied in internally developed reagents, which enabled direct RT-PCR from saliva and screening of viral genetic variants.

## EXPERTS IN MOLECULAR BIOLOGY REAGENTS

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PCR and related applications became our passion. With our expertise in protein engineering, we develop and produce unique and high-performance reagents for PCR, RT-PCR, RNA production, NGS and sample preparation in research, development and diagnostics.

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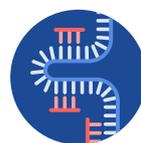


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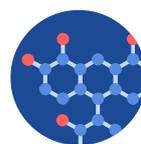
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# DB Taq DNA Polymerases

DB DNA Polymerases offer robust, precise amplification for both routine and challenging PCR. Featuring our proprietary **DB SuperSens Taq** and **DB AptaTaq**, these recombinant enzymes combine high thermostability with exceptional sensitivity. Available in colorless and green (ready-to-load) formulations.

## Key features

- High thermostability**  
 Recombinant enzymes with a half-life of over 40 min at 95 °C suitable for amplification of DNA up to 5 kb.
- Three enzymatic activities**  
 Possess intrinsic 5'-3' polymerase, 5'-3' exonuclease and 5' flap activities for various molecular biology applications.
- All-inclusive formulation**  
 Supplied with a complete reaction buffer with enhancers, stabilizers, and optimal concentration of metal ions and dNTPs.

## Applications

- Standard PCR
- High-yield PCR
- Colony PCR
- T/A cloning
- Genotyping
- GC-rich amplification

## Ordering information

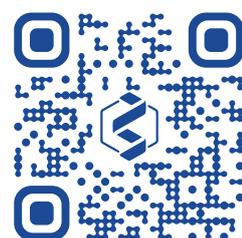
Catalogue number	Description	Size
DB-1326-0.4kU	DB AptaTaq DNA Polymerase	400 units
DB-1326-1.0kU	DB AptaTaq DNA Polymerase	1,000 units
DB-1326-5.0kU	DB AptaTaq DNA Polymerase	5,000 units
DB-1327-0.4kU	DB AptaTaq DNA Polymerase Green	400 units
DB-1327-1.0kU	DB AptaTaq DNA Polymerase Green	1,000 units
DB-1327-5.0kU	DB AptaTaq DNA Polymerase Green	5,000 units
DB-1328-0.4kU	DB SuperSens Taq DNA Polymerase	400 units
DB-1328-1.0kU	DB SuperSens Taq DNA Polymerase	1,000 units
DB-1328-5.0kU	DB SuperSens Taq DNA Polymerase	5,000 units
DB-1329-0.4kU	DB SuperSens Taq DNA Polymerase Green	400 units
DB-1329-1.0kU	DB SuperSens Taq DNA Polymerase Green	1,000 units
DB-1329-5.0kU	DB SuperSens Taq DNA Polymerase Green	5,000 units

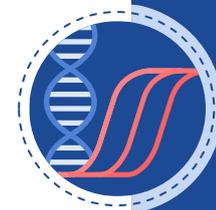
Supplied with a complete reaction buffer, PCR Buffer B (5X), which contains enhancers, stabilizers, and optimal concentration of KCl, MgCl<sub>2</sub> and dNTPs. No other components need to be added to run a standard PCR reaction. For green variants, PCR Buffer B Green (5X) also includes a density reagent and two tracking dyes for direct loading of PCR products on a gel.

## Storage and shelf-life

Store at -18 °C to -25 °C. Avoid more than 5 freeze-thaw cycles. If you intend to use the components more times, aliquot them after the first thawing.

To learn more about the product, visit our website





# DBdirect™ PCR & qPCR mixes SuperSens 2.0

Our PCR mixes deliver top-tier performance. They are optimized for universal use and feature the **DBdirect™ technology** for direct PCR without DNA extraction and the **SuperSens technology** for superior robustness, sensitivity and specificity. Their single-component formulation ensures maximum simplicity. Enjoy reduced hands-on time, consistent results, and complete coverage of your PCR needs – from routine detection to ultrasensitive assays.

## Key features

### ● Unmatched sensitivity and specificity

DB SuperSens Taq DNA Polymerase provides the highest possible sensitivity and specificity, even in complex DNA mixtures.

### ● User-friendly formulations

Single-component formulations for easy handling.  
Gel mixes contain gel loading dyes, SYBR mixes include SYBR Green I.

### ● Exceptional stability from fridge to bench

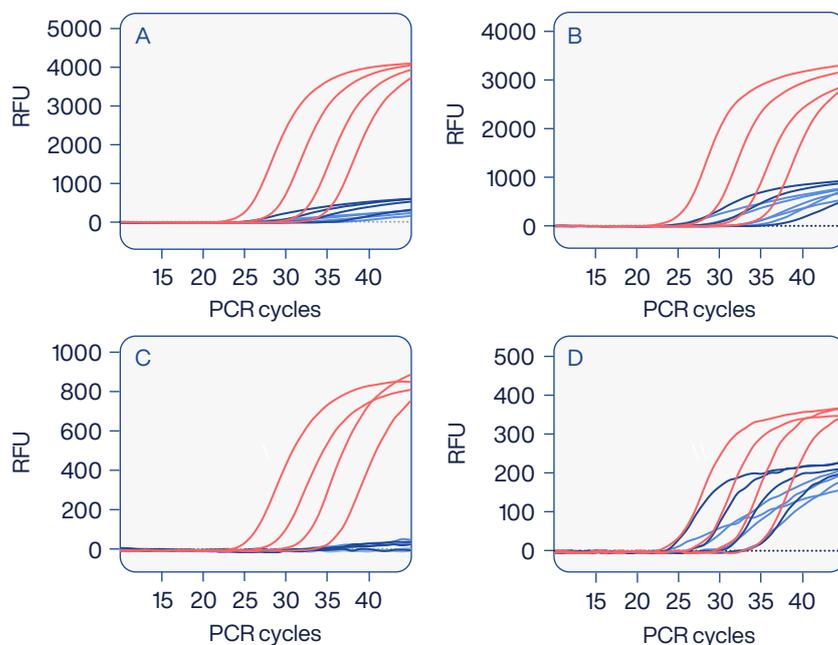
Maintain their performance for at least 4 weeks at 4 °C. Probe mixes retain full sensitivity after incubation for up to 5 days at 25 °C\*.

### ● Excellent robustness and inhibitor resistance

Deliver exceptional robustness and ultrasensitive detection, down to 1 DNA copy. Enable direct DNA detection from biological samples.

### ● Effective contamination control with UDG

Available in two versions: with or without UDG. UDG-versions include an optimized ratio of dUTP and dTTP, ensuring robust PCR amplification without compromising UDG efficiency.



### Performance in bacterial and viral multiplex qPCR

- KAPA2G Fast HotStart Ready Mix (Roche)
- TaqMan Universal Master Mix II, with UNG (Thermo)
- DBdirect™ PCR Probe Mix SuperSens 2.0 UDG (DB-1309)

DBdirect™ qPCR mixes are exceptionally robust and stable.

DBdirect™ qPCR probe mixes demonstrate significantly higher amplification efficiency than competitor mixes. The data below show results from multiplex qPCR with freshly prepared reactions and without any pre-incubation: (A) Viral target A: FAM channel; (B) Viral target B: HEX channel; (C) Bacterial target A: TEX channel; (D) Bacterial target B: Cy5 channel.

**PCR protocol:** 2 min at 25 °C, 2 min at 95 °C\*\*, 45 cycles: 10 sec at 95 °C, 15 sec at 60 °C, 15 sec at 72 °C.

**Dilution series of the template:** 10,000 – 1,000 – 100 – 10 copies per well (cDNA used for viral samples).

\* Exact stability is assay and product-specific. Please refer to the individual Instructions for use for detailed conditions.

\*\* 10 min for TaqMan kit (required by the manufacturer's instructions).



# DBdirect™ PCR & qPCR mixes SuperSens 2.0

## Ordering information

Catalogue number	Description	Size
DB-1308-100rxns	DBdirect™ PCR Probe Mix SuperSens 2.0	100 reactions
DB-1308-1000rxns	DBdirect™ PCR Probe Mix SuperSens 2.0	1,000 reactions
DB-1308-5000rxns	DBdirect™ PCR Probe Mix SuperSens 2.0	5x1,000 reactions
DB-1309-100rxns	DBdirect™ PCR Probe Mix SuperSens 2.0 UDG	100 reactions
DB-1309-1000rxns	DBdirect™ PCR Probe Mix SuperSens 2.0 UDG	1,000 reactions
DB-1309-5000rxns	DBdirect™ PCR Probe Mix SuperSens 2.0 UDG	5x1,000 reactions

Catalogue number	Description	Size
DB-1310-100rxns	DBdirect™ PCR SYBR Mix SuperSens 2.0	100 reactions
DB-1310-1000rxns	DBdirect™ PCR SYBR Mix SuperSens 2.0	1,000 reactions
DB-1310-5000rxns	DBdirect™ PCR SYBR Mix SuperSens 2.0	5x1,000 reactions
DB-1316-100rxns	DBdirect™ PCR SYBR Mix SuperSens 2.0 UDG	100 reactions
DB-1316-1000rxns	DBdirect™ PCR SYBR Mix SuperSens 2.0 UDG	1,000 reactions
DB-1316-5000rxns	DBdirect™ PCR SYBR Mix SuperSens 2.0 UDG	5x1,000 reactions

Catalogue number	Description	Size
DB-1311-100rxns	DBdirect™ PCR Gel Mix SuperSens 2.0	100 reactions
DB-1311-1000rxns	DBdirect™ PCR Gel Mix SuperSens 2.0	1,000 reactions
DB-1311-5000rxns	DBdirect™ PCR Gel Mix SuperSens 2.0	5x1,000 reactions
DB-1317-100rxns	DBdirect™ PCR Gel Mix SuperSens 2.0 UDG	100 reactions
DB-1317-1000rxns	DBdirect™ PCR Gel Mix SuperSens 2.0 UDG	1,000 reactions
DB-1317-5000rxns	DBdirect™ PCR Gel Mix SuperSens 2.0 UDG	5x1,000 reactions

## Mix components

Component	Volume (µL)		
	100 rxns	1,000 rxns	5x1,000 rxns
PCR Mix SuperSens 2.0 (2X)	1,000	10,000	5x10,000
PCR grade water	1,000	10,000	5x10,000

PCR mix SuperSens 2.0 (2X) contains Hot-start DB SuperSens Taq DNA polymerase, dNTPs, MgCl<sub>2</sub>, enhancers, and stabilizers.

In addition:

- SYBR mixes contain SYBR Green I dye;
- Gel mixes contain blue and yellow tracking dyes;
- UDG variants contain thermolabile uracil-DNA glycosylase and dUTP.

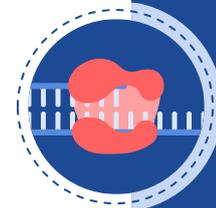
Larger and OEM sizes are available upon request to [lifescience@dianabiotech.com](mailto:lifescience@dianabiotech.com).

## Storage and shelf-life

Store at ≤ -18 °C and avoid freeze-thaw cycles for maximum performance. Up to four freeze-thaw cycles have been tested without a loss in performance. Stable for 2 years at ≤ -18 °C, up to 4 weeks at 4 °C and several days at 25 °C.

To learn more about the product, visit our website





# DBscript Reverse Transcriptase

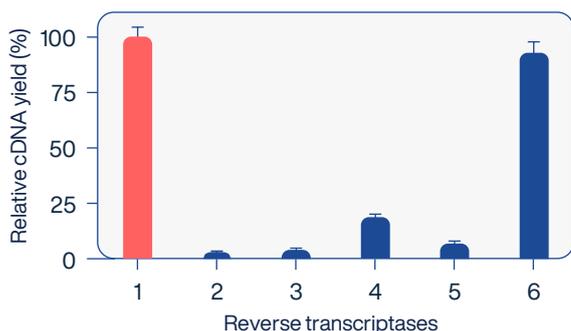
We provide complete set of reliable and efficient reagents for cDNA synthesis: enzymes, primers and kits. The highly active and thermostable **DBscript Reverse Transcriptase** provides high yields of full-length cDNA. Offered as a standalone enzyme or within the DBscript cDNA Synthesis Kit, it provides flexibility for any workflow. Complementary cDNA synthesis primers are also available separately.

## Key features

- High performance**  
 Engineered M-MLV Reverse Transcriptase matching SuperScript III performance.
- High thermostability**  
 Supports reverse transcription at 42–60 °C, ensuring higher specificity and cDNA yields.
- Wide-range sensitivity**  
 Analyze 1 pg to 1 µg of RNA template with two-step RT-qPCR.

## Applications

- Two-step reverse transcription-qPCR
- cDNA cloning and library construction
- cDNA synthesis at high temperatures (> 50 °C)



DBscript ensures higher cDNA yields than competitors. cDNA synthesis from 1 kb RNA template was performed for 2 min at 60 °C using DBscript and five common competitors. The results show that DBscript matches SuperScript III performance and exceeds all other competitors:

1. DBscript (DIANA)
2. MMLV (Thermo)
3. M-MuLV (NEB)
4. ProtoScript II (NEB)
5. SuperScript II (Thermo)
6. SuperScript III (Thermo)

## Ordering information

Catalogue number	Description	Size
DB-1276-2kU	DBscript Reverse Transcriptase	2,000 units
DB-1276-10kU	DBscript Reverse Transcriptase	10,000 units
DB-1276-40kU	DBscript Reverse Transcriptase	40,000 units

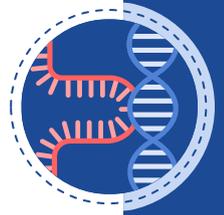
Supplied with reaction buffer, RT Buffer A (5X), and separate DTT solution (20X). RT buffer A (5X) contains dNTPs, MgCl<sub>2</sub>, KCl, enhancers and stabilizers.

## Storage and shelf-life

Store at -18 °C to -25 °C. Avoid more than 5 freeze/thaw cycles for RT Buffer A (5X) and DTT solution (20X).

To learn more about the product, visit our website





# DBscript cDNA Synthesis Kit

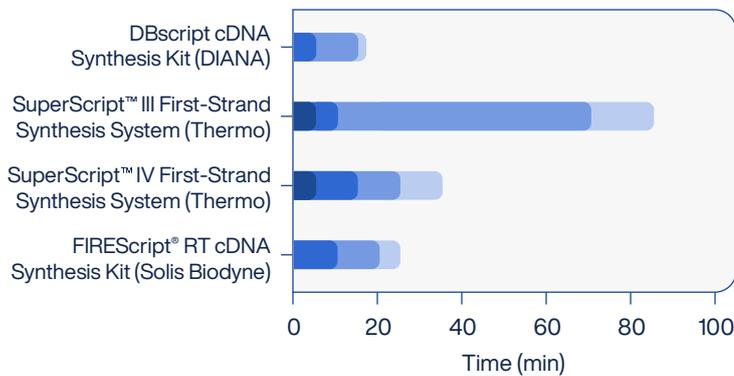
The ready-to-use kit provides all components required for efficient and reliable cDNA preparation from RNA templates. It includes our high-performance DBscript Reverse Transcriptase, optimized 5X Reaction Buffer, DTT, DB RNase Inhibitor Bovine, and cDNA synthesis primers, offering a complete and convenient solution for routine and high-sensitivity applications.

## Key features

- High performance**  
 Engineered M-MLV Reverse Transcriptase matching SuperScript III performance.
- High thermostability**  
 Supports reverse transcription at 42–60 °C, ensuring higher specificity and cDNA yields.
- Wide-range sensitivity**  
 Analyze 1 pg to 1 µg of RNA with two-step RT-qPCR.
- Superfast and easy protocol**  
 10-minute workflow with minimal pipetting, time-saving format.

## Applications

- Two-step reverse transcription-qPCR
- cDNA cloning and library construction
- cDNA synthesis at high temperatures (>50 °C)



DBscript offers the shortest protocol with minimum pipetting steps

- RNA denaturation 65 °C
- Primer annealing 23–25 °C
- cDNA synthesis 50–60 °C
- RT inactivation 70–95 °C

## Ordering information

Catalogue number	Description	Size
DB-1285	DBscript cDNA Synthesis Kit	50 reactions

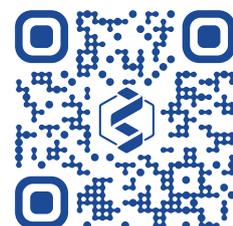
## Kit components

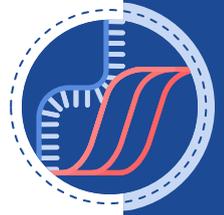
Component	Concentration	Volume (µL)
DBscript Reverse Transcriptase	200 U/µL	50
RT Buffer A	5X	1,000
DTT solution	20X	250
DB RNase Inhibitor Bovine	40 U/µL	100
Oligo(dT) <sub>20</sub> Primer	50 µM	50
Random Hexamers	125 µM	50
PCR grade water	N/A	1,500

## Storage and shelf-life

Store DBscript Reverse Transcriptase and DB RNase inhibitor Bovine at –18 °C to –25 °C. Store RT Buffer A (5X), DTT (20X), oligo(dT)<sub>20</sub> primer and random hexamers at ≤ –18 °C. Avoid more than 5 freeze-thaw cycles for RT Buffer A (5X) and DTT (20X).

To learn more about the product, visit our website



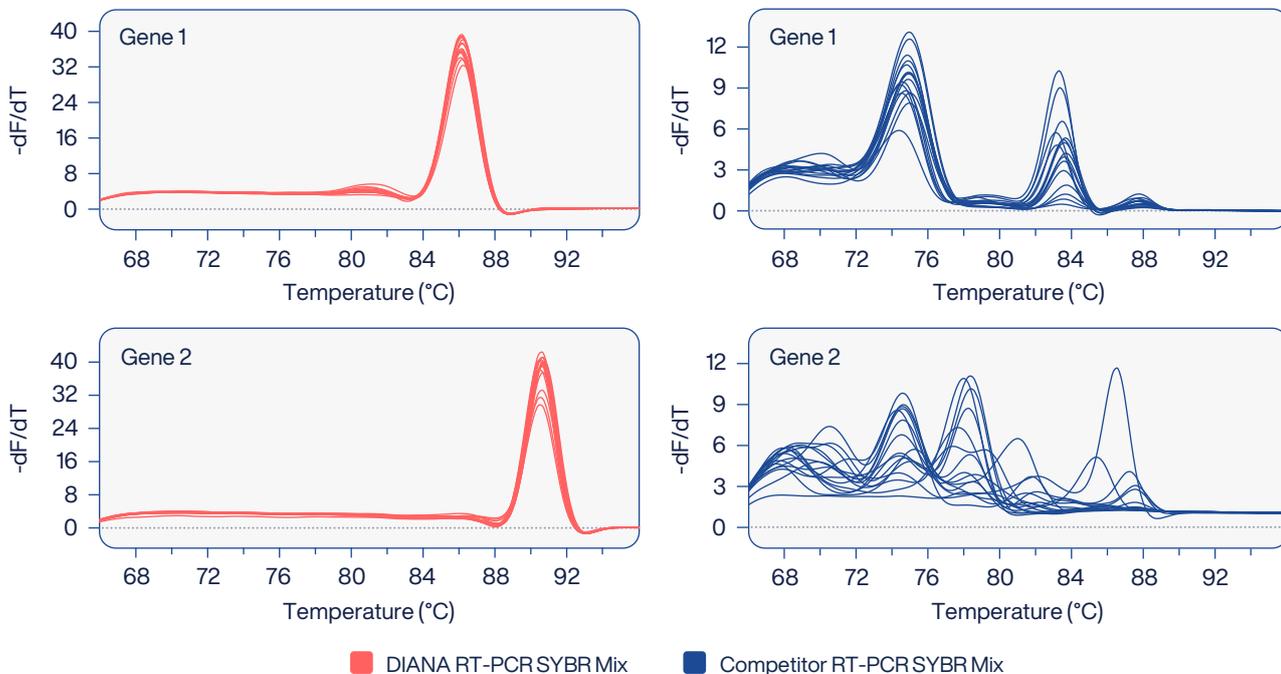


# DB RT-PCR & RT-qPCR Mixes SuperSens 2.0

Our RT-PCR and RT-qPCR mixes provide high performance across diverse applications. Built on SuperSens technology, they deliver exceptional robustness, sensitivity, and specificity. Single-component formulation for maximum simplicity. Enjoy short hands-on time, consistent results, and complete coverage of your needs – from routine detection to ultrasensitive assays.

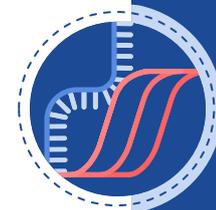
## Key features

- Thermostable & specific reverse transcriptase**  
 Thermostable and warm-start DBscript Reverse Transcriptase enables RT-PCR at high temperatures (up to 60°C).
- User-friendly formulations**  
 Single-component formulations for easy handling. Gel mixes contain gel loading dyes, SYBR mixes include SYBR Green I.
- Exceptional stability from fridge to bench**  
 Maintain their performance for at least 4 weeks at 4 °C.
- Excellent robustness and inhibitor resistance**  
 Deliver exceptional robustness and ultrasensitive detection, down to 1 RNA copy.
- Effective contamination control with UDG**  
 Available in two versions: with or without UDG. UDG-versions include an optimized ratio of dUTP and dTTP, ensuring robust PCR amplification without compromising UDG efficiency.



### Ultra-specific RNA detection with our DB RT-qPCR mixes.

In a customer study, the relative expression of two *Arabidopsis thaliana* genes was analyzed under different light conditions. Quantitative RT-PCR was performed with our DB RT-PCR SYBR Mix and a leading competitor mix. Melting curve analysis revealed multiple non-specific products for the competitor mix; in contrast, DB RT-PCR SYBR Mix produced a single specific amplicon. The high specificity of our mixes simplifies primer design and ensures reliable quantification across experiments.



# DB RT-PCR & RT-qPCR Mixes SuperSens 2.0

## Ordering information

Catalogue number	Description	Size
DB-1312-100rxns	DB RT-PCR Probe Mix SuperSens 2.0	100 reactions
DB-1312-1000rxns	DB RT-PCR Probe Mix SuperSens 2.0	1,000 reactions
DB-1312-5000rxns	DB RT-PCR Probe Mix SuperSens 2.0	5x1,000 reactions
DB-1313-100rxns	DB RT-PCR Probe Mix SuperSens 2.0 UDG	100 reactions
DB-1313-1000rxns	DB RT-PCR Probe Mix SuperSens 2.0 UDG	1,000 reactions
DB-1313-5000rxns	DB RT-PCR Probe Mix SuperSens 2.0 UDG	5x1,000 reactions
DB-1314-100rxns	DB RT-PCR Probe Mix SuperSens 2.0 dUTP	100 reactions
DB-1314-1000rxns	DB RT-PCR Probe Mix SuperSens 2.0 dUTP	1,000 reactions
DB-1314-5000rxns	DB RT-PCR Probe Mix SuperSens 2.0 dUTP	5x1,000 reactions

Catalogue number	Description	Size
DB-1315-100rxns	DB RT-PCR SYBR Mix SuperSens 2.0	100 reactions
DB-1315-1000rxns	DB RT-PCR SYBR Mix SuperSens 2.0	1,000 reactions
DB-1315-5000rxns	DB RT-PCR SYBR Mix SuperSens 2.0	5x1,000 reactions
DB-1318-100rxns	DB RT-PCR SYBR Mix SuperSens 2.0 UDG	100 reactions
DB-1318-1000rxns	DB RT-PCR SYBR Mix SuperSens 2.0 UDG	1,000 reactions
DB-1318-5000rxns	DB RT-PCR SYBR Mix SuperSens 2.0 UDG	5x1,000 reactions

Catalogue number	Description	Size
DB-1319-100rxns	DB RT-PCR Gel Mix SuperSens 2.0	100 reactions
DB-1319-1000rxns	DB RT-PCR Gel Mix SuperSens 2.0	1,000 reactions
DB-1319-5000rxns	DB RT-PCR Gel Mix SuperSens 2.0	5x1,000 reactions
DB-1320-100rxns	DB RT-PCR Gel Mix SuperSens 2.0 UDG	100 reactions
DB-1320-1000rxns	DB RT-PCR Gel Mix SuperSens 2.0 UDG	1,000 reactions
DB-1320-5000rxns	DB RT-PCR Gel Mix SuperSens 2.0 UDG	5x1,000 reactions

## Mix components

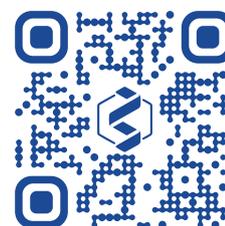
Component	Volume (µL)		
	100 rxns	1,000 rxns	5x1,000 rxns
RT-PCR Mix SuperSens 2.0 (2X)	1,000	10,000	5x10,000
PCR grade water	1,000	10,000	5x10,000

RT-PCR mix SuperSens 2.0 (2X) contains Hot-start DB SuperSens Taq DNA polymerase, thermostable DBscript Reverse Transcriptase, DB RNase Inhibitor Bovine, dNTPs, MgCl<sub>2</sub>, enhancers, and stabilizers. Larger and OEM sizes are available upon request to [lifescience@dianabiotech.com](mailto:lifescience@dianabiotech.com).

## Storage and shelf-life

Store at  $\leq -18^{\circ}\text{C}$  and avoid freeze-thaw cycles for maximum performance. Up to four freeze-thaw cycles have been tested without a loss in performance. Stable for 2 years at  $\leq -18^{\circ}\text{C}$  and up to 4 weeks at  $4^{\circ}\text{C}$ .

To learn more about the product, visit our website





# DBdirect™ RT-qPCR Mixes SuperSens 2.0

Our RT-PCR and RT-qPCR mixes provide high performance across diverse applications. Built on SuperSens™ technology, they deliver exceptional robustness, sensitivity, and specificity. Selected mixes include DBdirect™ technology for direct RT-PCR without RNA extraction.

Single-component formulation for maximum simplicity. Enjoy short hands-on time, consistent results, and complete coverage of your needs – from routine detection to ultrasensitive assays.

## Key features

### ● Thermostable & specific reverse transcriptase

Thermostable and warm-start DBscript Reverse Transcriptase enables RT-PCR at high temperatures (up to 60°C).

### ● User-friendly formulations

Single-component formulations for easy handling. SYBR mixes include SYBR Green I.

### ● Exceptional stability from fridge to bench

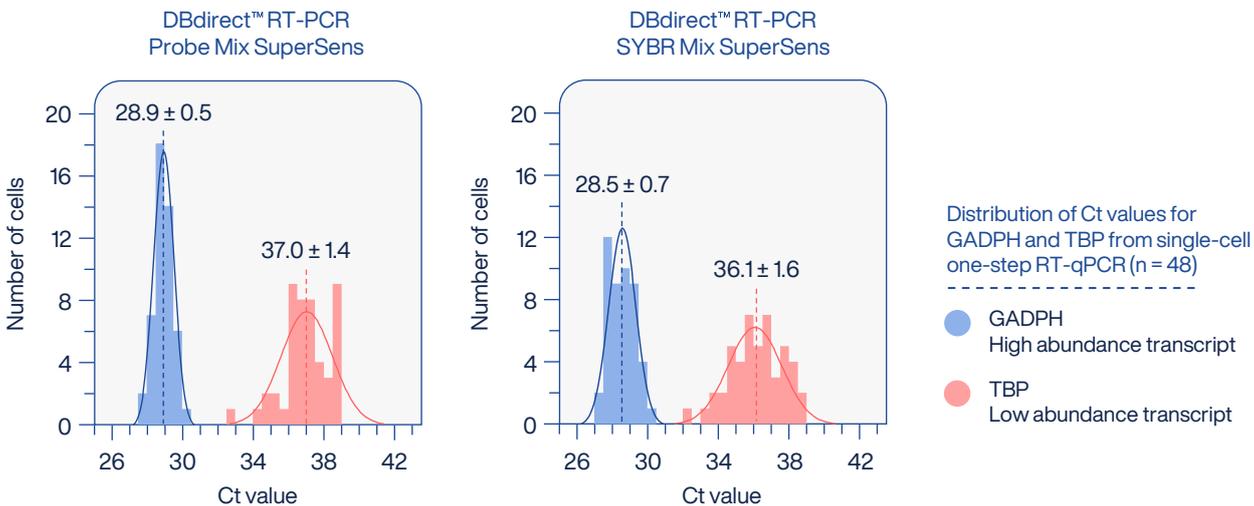
Maintain their performance for at least 4 weeks at 4 °C.

### ● Excellent robustness and inhibitor resistance

Deliver exceptional robustness and ultrasensitive detection, down to 1 RNA copy. Enable direct RNA detection from biological samples.

### ● Effective contamination control with UDG

Available in two versions: with or without UDG. UDG-versions include an optimized ratio of dUTP and dTTP, ensuring robust PCR amplification without compromising UDG efficiency.



DBdirect™ mixes enable direct RT-PCR from biological samples down to single-cell gene expression analysis.

CCRF-CEM human cells were FACS-sorted directly into PCR plates containing 10 µL of RT-PCR mix and processed by one-step RT-qPCR. Two transcripts (GAPDH and TBP) were detected using either sequence-specific TaqMan probes or SYBR Green I dye. DBdirect™ RT-PCR mixes enable precise mRNA quantification from single cells without RNA extraction, allowing rapid, cost-efficient RNA profiling at single-cell resolution.



# DBdirect™ RT-qPCR Mixes SuperSens 2.0

## Ordering information

Catalogue number	Description	Size
DB-1321-100rxns	DBdirect™ RT-PCR Probe Mix SuperSens 2.0	100 reactions
DB-1321-1000rxns	DBdirect™ RT-PCR Probe Mix SuperSens 2.0	1,000 reactions
DB-1321-5000rxns	DBdirect™ RT-PCR Probe Mix SuperSens 2.0	5x1,000 reactions
DB-1322-100rxns	DBdirect™ RT-PCR Probe Mix SuperSens 2.0 UDG	100 reactions
DB-1322-1000rxns	DBdirect™ RT-PCR Probe Mix SuperSens 2.0 UDG	1,000 reactions
DB-1322-5000rxns	DBdirect™ RT-PCR Probe Mix SuperSens 2.0 UDG	5x1,000 reactions

Catalogue number	Description	Size
DB-1323-100rxns	DBdirect™ RT-PCR SYBR Mix SuperSens 2.0	100 reactions
DB-1323-1000rxns	DBdirect™ RT-PCR SYBR Mix SuperSens 2.0	1,000 reactions
DB-1323-5000rxns	DBdirect™ RT-PCR SYBR Mix SuperSens 2.0	5x1,000 reactions
DB-1324-100rxns	DBdirect™ RT-PCR SYBR Mix SuperSens 2.0 UDG	100 reactions
DB-1324-1000rxns	DBdirect™ RT-PCR SYBR Mix SuperSens 2.0 UDG	1,000 reactions
DB-1324-5000rxns	DBdirect™ RT-PCR SYBR Mix SuperSens 2.0 UDG	5x1,000 reactions

## Mix components

Component	Volume (µL)		
	100 rxns	1,000 rxns	5x1,000 rxns
DBdirect™ RT-PCR Mix SuperSens 2.0 (2X)	1,000	10,000	5x10,000
PCR grade water	1,000	10,000	5x10,000

DBdirect™ RT-PCR mix SuperSens 2.0 (2X) contains Hot-start DB SuperSens Taq DNA polymerase, thermostable DBscript Reverse Transcriptase (engineered M-MLV), DB Ultima H RNase Inhibitor, dNTPs, MgCl<sub>2</sub>, enhancers, and stabilizers. In addition:

- SYBR mixes contain SYBR Green I dye;
- UDG variants contain thermolabile uracil-DNA glycosylase and dUTP.

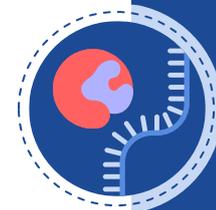
Larger and OEM sizes are available upon request to [lifescience@dianabiotech.com](mailto:lifescience@dianabiotech.com).

## Storage and shelf-life

Store at  $\leq -70\text{ }^{\circ}\text{C}$  and avoid freeze-thaw cycles for maximum performance. Up to four freeze-thaw cycles have been tested without a loss in performance. Stable for 2 years at  $\leq -70\text{ }^{\circ}\text{C}$  and up to 4 weeks at  $4\text{ }^{\circ}\text{C}$ .

To learn more about the product, visit our website





## DB Ultima H RNase Inhibitor

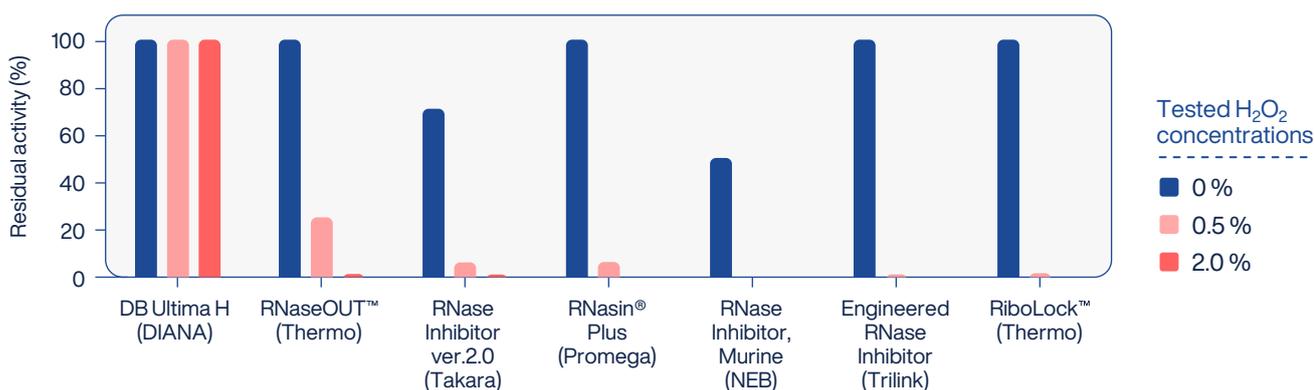
DB Ultima H is a highly-engineered RNase inhibitor with the highest thermal stability and almost absolute oxidation resistance, leading to robust performance across diverse assay environments. It does not interfere with enzymes used in RNA applications. DB Ultima H thus sets a new benchmark for reliability in RNA protection across various workflows.

### Key features

- Excellent storage and assay stability**  
 Stable for at least 2 months with 1 mM DTT and at least one week without DTT (at 25 °C).
- Exceptional thermostability**  
 The only RNase inhibitor active at temperatures above 55 °C.
- Complete oxidation resistance**  
 The only truly oxidatively resistant RNase inhibitor (retains activity at 2.0% H<sub>2</sub>O<sub>2</sub>).

### Applications

- One-step reverse transcription-qPCR
- In vitro* transcription and translation
- RNA structural and functional studies
- cDNA synthesis at high temperatures (>50 °C)
- Two-step reverse transcription-qPCR
- cDNA synthesis for subsequent cloning
- Expression profiling from single cells
- RNA isolation from biological samples



Residual inhibitor activity after pre-incubation with hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) for 20 min (no DTT).

Residual activity of RNase Inhibitors was tested after pre-incubation with various concentrations of hydrogen peroxide. The results show that DB Ultima H is the only oxidatively resistant RNase inhibitor.

### Ordering information

Catalogue number	Description	Size
DB-1306-2.5kU	DB Ultima H RNase Inhibitor	2,500 units
DB-1306-10kU	DB Ultima H RNase Inhibitor	10,000 units
DB-1306-40kU	DB Ultima H RNase Inhibitor	40,000 units

Provided as 40 U/μL solution in storage buffer. Recommended working concentration is 0.5 unit per 1 μL reaction, lower concentration might be sufficient for some applications (e.g., one step RT-qPCR). Storage buffer: 20 mM HEPES pH 7.5, 50 mM KCl, 8 mM DTT, 0.5 mM EDTA, 50 % (v/v) glycerol.

### Storage and shelf-life

Store at -18 °C to -25 °C. Stable for 3 years under these conditions. The stock solution of Ultima H RNase Inhibitor is stable for up to 2 months at 25 °C.

To learn more about the product, visit our website





## DB RNase Inhibitor Bovine

RNase inhibitors are indispensable for maintaining RNA integrity during analysis. **DB RNase Inhibitor Bovine** offers potent inactivation of ribonucleases to protect your samples. Designed to overcome common stability challenges, it ensures efficient RNA protection at a budget-friendly cost.

### Key features

- **Broad assay compatibility**  
 Does not inhibit polymerase activity of common enzymes and ensures RNA protection across all applications.
- **Increased oxidation resistance**  
 Demonstrates higher oxidative stability and longer shelf-life than inhibitors from other species.
- **All-inclusive formulation**  
 Provides efficient RNA protection at a highly competitive price.

### Applications

- One-step reverse transcription-qPCR
- *In vitro* transcription and translation
- RNA structural and functional studies
- cDNA synthesis at high temperatures (>50 °C)
- Two-step reverse transcription-qPCR
- cDNA synthesis for subsequent cloning
- Expression profiling from single cells
- RNA isolation from biological samples

### Ordering information

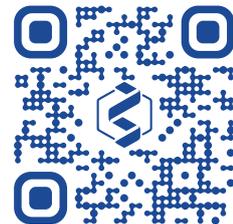
Catalogue number	Description	Size
DB-1260-2.5kU	DB RNase Inhibitor Bovine	2,500 units
DB-1260-10kU	DB RNase Inhibitor Bovine	10,000 units
DB-1260-40kU	DB RNase Inhibitor Bovine	40,000 units

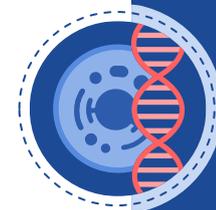
Provided as 40 U/μL solution in storage buffer. Recommended working concentration is 1 unit per 1 μL reaction, lower concentration might be sufficient for some applications (e.g., one step RT-qPCR). Storage buffer: 20 mM HEPES pH 7.5, 50 mM KCl, 8 mM DTT, 0.5 mM EDTA, 50 % (v/v) glycerol.

### Storage and shelf-life

Store at -18 °C to -25 °C.  
 Under these conditions, the product remains stable for 3 years.

To learn more about the product, visit our website





# DB Lysis Buffers

DB Lysis Buffers are exceptional tools for easy and straightforward extraction of genomic DNA and total RNA for your application. They enhance the efficiency and sensitivity of our DB PCR and RT-PCR mixes and are suitable for a wide range of biological matrices and samples.

## DB Lysis Buffer A

Solution for fast and easy extraction of genomic DNA from cells. Supplementary reagent for DBdirect™ PCR Mixes.

Store at 2–8 °C for long-term storage. Lysis Buffer A can be stored at room temperature (up to 25 °C) for 2 weeks.

Catalogue number	Size
DB-1281-5ml	5 mL

## DB Lysis Buffer B

Solution for fast and easy extraction of total RNA from cells. Supplementary reagent for DB and DBdirect™ RT-PCR Mixes.

Store at ≤ -70 °C for long-term storage.

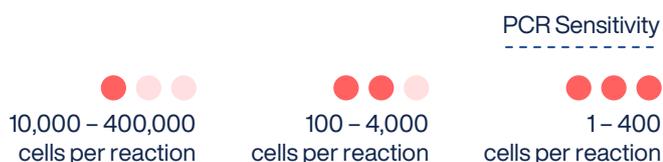
Catalogue number	Size
DB-1330-5ml	5 mL

To learn more about the products, visit our website

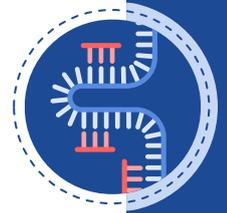


## DB Lysis Buffer A enhances sensitivity of DBdirect™ PCR mixes

Selected viruses, bacteria, or cells can be added directly into PCR mix, while a simple one-step pre-treatment with DB Lysis Buffer A is available for more complex organisms and tissues.



Sample	PCR sensitivity	
	without DB Lysis Buffer A	with DB Lysis Buffer A
Human cells	● ● ●	● ● ●
Gram-negative bacteria <i>E. coli</i>	● ● ●	● ● ●
Gram-positive bacteria <i>Lactobacillus</i>	● ● ●	● ● ●
Gram-positive bacteria <i>Rhodococcus</i>	● ● ●	● ● ●
Yeasts <i>S. cerevisiae</i>	● ● ●	● ● ●
Unenveloped viruses ADV	● ● ●	● ● ●
Enveloped viruses HSV-1	● ● ●	● ● ●

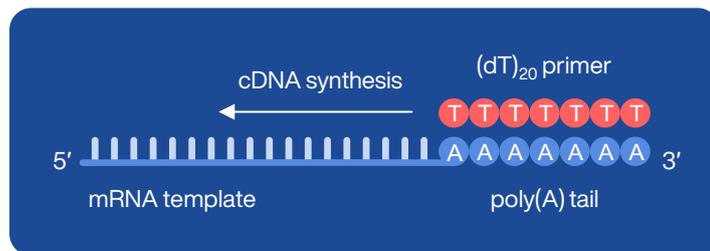


## Primers for cDNA Synthesis

We provide complete set of reliable and efficient reagents for cDNA synthesis: enzymes, primers and kits. The highly active and thermostable DBscript Reverse Transcriptase provides high yields of full-length cDNA. Offered as a standalone enzyme or within the DBscript cDNA Synthesis Kit, it provides flexibility for any workflow. Complementary cDNA synthesis primers are also available separately.

### DB Oligo(dT)<sub>20</sub> Primer

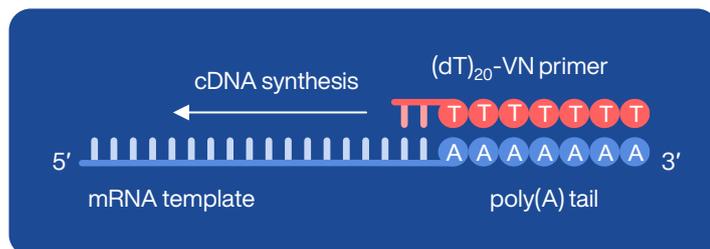
DB Oligo(dT)<sub>20</sub> primer anneals to poly(A) tail of mRNAs promoting synthesis of full-length cDNAs. Provided as 50 μM (20X) solution. Store at ≤ -18 °C. Stable for up to 3 years.



Catalogue number	Size
DB-1282-2.5nmol	2.5 nmol

### DB Anchored Oligo(dT)<sub>20</sub>-VN Primer

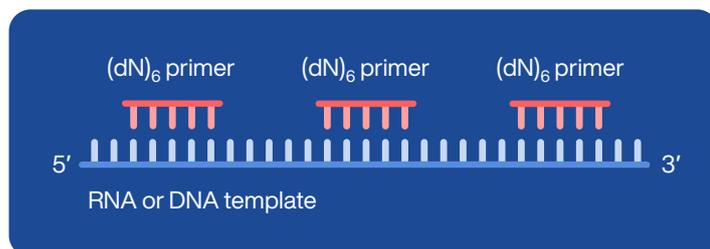
DB Anchored oligo(dT)<sub>20</sub>-VN primer for maximum efficiency of full-length cDNA synthesis from poly(A) tail. Provided as 50 μM (20X) solution. Store at ≤ -18 °C. Stable for up to 3 years.



Catalogue number	Size
DB-1283-2.5nmol	2.5 nmol

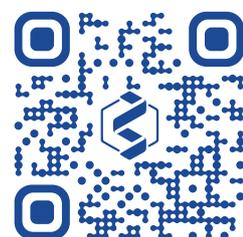
### DB Random Hexamers

DB Random hexamers anneal and start cDNA synthesis at random complementary regions of the mRNA template, resulting in shorter cDNA fragments. Provided as 25 or 125 μM solution. Store at ≤ -18 °C. Stable for up to 3 years.



Catalogue number	Size
DB-1284-1.25nmol	1.25 nmol
DB-1284-6.25nmol	6.25 nmol

To learn more about the products, visit our website





## DB Uracil-DNA Glycosylases

Uracil-DNA glycosylases (UDG) remove uracil from DNA molecules. UDGs have found widespread use in qPCR and RT-qPCR applications as supplementary reagents for removal of carry-over contaminants from previous PCR reactions. We provide three UDG enzymes for OEM production that are suitable for various applications:

### DB Cod Uracil-DNA Glycosylase

Supplementary thermolabile enzyme that prevents carry-over contamination during (RT)-qPCR. Best suitable for RT-qPCR with reverse transcription at 42 °C.

- Quantitative PCR (qPCR)
- One-step RT-qPCR
- Two-step RT-qPCR

Glycerol form	Glycerol-free form	Availability
Yes	Yes	Upon request

### DB Thermolabile Uracil-DNA Glycosylase

Supplementary thermolabile enzyme that prevents carry-over contamination during (RT)-qPCR. Best suitable for qPCR and RT-qPCR with RT at 50°C or higher. Stable at 25 °C in qPCR and RT-qPCR mixes.

- Quantitative PCR (qPCR)
- One-step RT-qPCR
- Two-step RT-qPCR

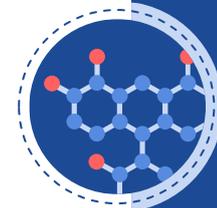
Glycerol form	Glycerol-free form	Availability
Yes	Yes	Upon request

### DB Thermostable Uracil-DNA Glycosylase

Supplementary thermostable enzyme suitable for special applications.

- DNA damage-repair studies
- DNA assembly and cloning

Glycerol form	Glycerol-free form	Availability
Yes	Yes	Upon request



## AF Fluorescent Dyes

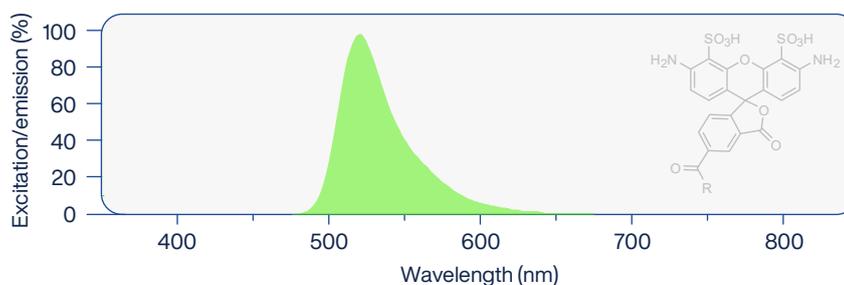
AF Dyes is a series of sulfonated fluorescent dyes for efficient labeling of various biomolecules such as nucleic acids, proteins, antibodies, and lipids. AF Dyes are structurally identical to Alexa Fluor™ dyes and offer identical brightness, photostability, and pH tolerance for a variety of imaging applications, including confocal microscopy and flow cytometry.

### AF 488 Dye

AF 488 dye is a bright green fluorescent dye structurally identical to Alexa Fluor™ 488.

**Excitation:** 490 nm

**Emission:** 525 nm

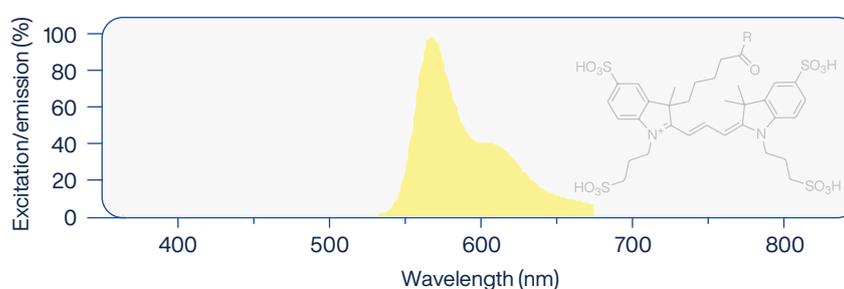


### AF 555 Dye

AF 555 dye is a bright yellow fluorescent dye structurally identical to Alexa Fluor™ 555.

**Excitation:** 552 nm

**Emission:** 566 nm

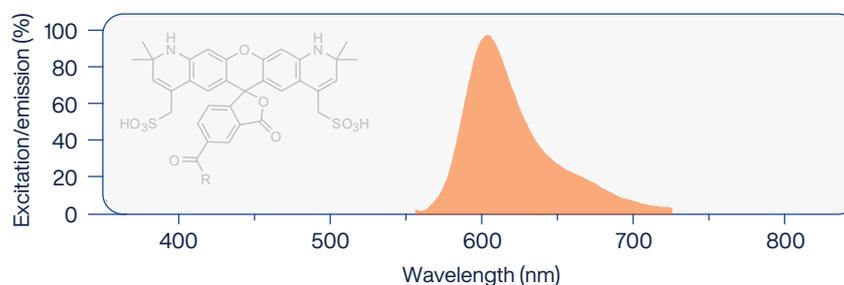


### AF 568 Dye

AF 568 dye is a bright orange fluorescent dye structurally identical to Alexa Fluor™ 568.

**Excitation:** 579 nm

**Emission:** 603 nm

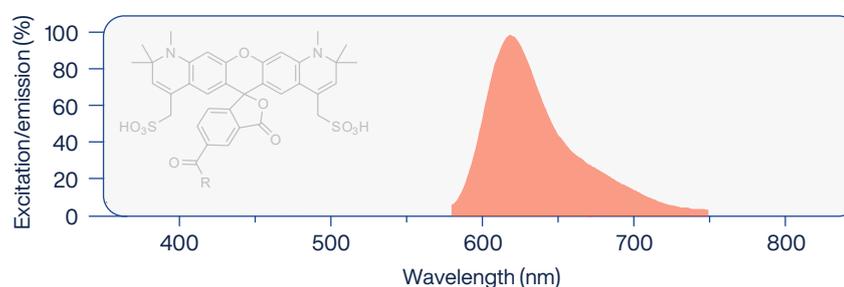


### AF 594 Dye

AF 594 dye is a bright red fluorescent dye structurally identical to Alexa Fluor™ 594.

**Excitation:** 590 nm

**Emission:** 618 nm

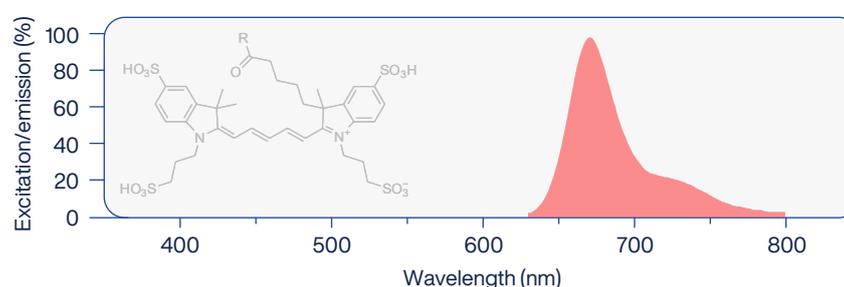


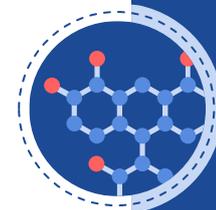
### AF 647 Dye

AF 647 dye is a bright red fluorescent dye structurally identical to Alexa Fluor™ 647.

**Excitation:** 650 nm

**Emission:** 671 nm





# AF Fluorescent Dyes

## Key features

- **Exceptional performance**  
Structurally identical to Alexa Fluor™ dyes and provide same brightness and photostability at a significantly lower cost.
- **High compatibility**  
Water-soluble dyes with high pH stability (4–10) suitable for labeling of biomolecules or small ligands under various conditions.
- **Various modifications**  
Available in multiple chemical forms, allowing you to select the option which is best suited for your specific application.

## Applications

- Confocal Microscopy;
- Super resolution microscopy;
- Flow cytometry;
- Cell cultures and tissue labeling;
- Fluorescence-activated cell sorting (FACS).

## Available AF dye modifications

Modification	Coupling group	AF 488	AF 555	AF 568	AF 594	AF 647
NHS ester	Amine	DB410102	DB410502	DB410202	DB410302	DB410402
Carboxylic acid	Amine (EDC)	DB410103	DB410503	DB410203	DB410303	DB410403
Amine	NHS ester	DB40104	DB410504	DB410204	DB410304	DB410404
Alkyne	Azide	DB410105	DB410505	DB410205	DB410305	DB410405
Azide	Alkyne	DB410106	DB410506	DB410206	DB410306	DB410406
PEG4 Alkyne	Azide	DB410107	DB410507	DB410207	DB410307	DB410407
PEG4 Azide	Alkyne	DB410108	DB410508	DB410208	DB410308	DB410408
DBCO	Azide	DB410109	DB410509	DB410209	DB410309	DB410409
Maleimide	Thiol	DB410110	DB410510	DB410210	DB410310	DB410410
PEG5 Biotin	Streptavidin	DB410111	DB410511	DB410211	DB410311	DB410411
TCO	Tetrazine	DB410112	DB410512	DB410212	DB410312	DB410412

All AF modifications are available in 1, 5, 10, 25, 50 and 100 mg quantities.

To learn more about the products, visit our website



## Custom Services

Reliable tools are the foundation of reproducible science. We provide top-quality custom services tailored to your specific needs, including custom oligonucleotide synthesis, protein expression, and complete mRNA production workflows. Let us handle the complex manufacturing so you can focus on your research goals.



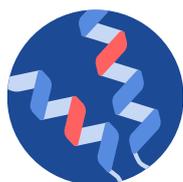
### Custom Oligonucleotide Synthesis

Synthetic oligonucleotides are indispensable tools for molecular diagnostics, therapeutics and genetic research. We deliver top-quality custom DNA and RNA oligonucleotides tailored to your needs. With a wide range of modifications, we guarantee the highest purity, quality, and yield at competitive prices.



#### Types of oligonucleotides

- Standard RNA oligos
- Fluorescent probes
- Modified oligos
- Locked nucleic acids
- Standard DNA oligos
- Large-scale oligos
- Complex oligos
- Chimeric oligos

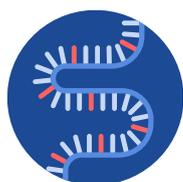


### Custom Protein Synthesis

Recombinant protein production is essential for academic research and drug discovery. We provide fast and cost-effective protein synthesis services ranging from gene synthesis to up-scale recombinant protein expression and purification at highly competitive prices.

#### Key features

- Various host species: bacteria to human cells
- Post-translational modifications
- *In vitro* protein modifications
- Up-scaled protein production



### Custom mRNA Production

Synthetic messenger RNA (mRNA) has emerged as an attractive new technology of drug therapy and vaccine development. We offer a comprehensive solution to mRNA production, ranging from synthesis, purification and quality control of synthetic mRNA to customizable OEM reagents for mRNA production.

#### Custom mRNA synthesis

- Length from 100 to 200,000 bases
- mRNA yields from 0.5 to 20 mg
- 5' capping and polyadenylation
- Contamination and quality control

#### Reagents for mRNA production

- High yield *in vitro* transcription kit
- mRNA capping kit (cap-0 or cap-1)
- mRNA poly(A) kit
- mRNA cleanup kit

## Products overview

### DNA polymerases

Product	Cat No
DB AptaTaq DNA Polymerase	DB-1326
DB AptaTaq DNA Polymerase Green	DB-1327
DB SuperSens Taq DNA Polymerase	DB-1328
DB SuperSens Taq DNA Polymerase Green	DB-1329

### PCR and qPCR Mixes

Product	Cat No
DBdirect™ PCR Probe Mix SuperSens 2.0	DB-1308
DBdirect™ PCR Probe Mix SuperSens 2.0 UDG	DB-1309
DBdirect™ PCR SYBR Mix SuperSens 2.0	DB-1310
DBdirect™ PCR SYBR Mix SuperSens 2.0 UDG	DB-1316
DBdirect™ PCR Gel Mix SuperSens 2.0	DB-1311
DBdirect™ PCR Gel Mix SuperSens 2.0 UDG	DB-1317

### RNase Inhibitors

Product	Cat No
DB Ultima H RNase Inhibitor	DB-1306
DB RNase Inhibitor Bovine	DB-1260

### Reverse Transcriptase

Product	Cat No
DBscript Reverse Transcriptase	DB-1276
DBscript cDNA Synthesis Kit	DB-1285

### RT-PCR and RT-qPCR Mixes

Product	Cat No
DB RT-PCR Probe Mix SuperSens 2.0	DB-1312
DB RT-PCR Probe Mix SuperSens 2.0 UDG	DB-1313
DB RT-PCR Probe Mix SuperSens 2.0 dUTP	DB-1314
DB RT-PCR SYBR Mix SuperSens 2.0	DB-1315
DB RT-PCR SYBR Mix SuperSens 2.0 UDG	DB-1318
DB RT-PCR Gel Mix SuperSens 2.0	DB-1319
DB RT-PCR Gel Mix SuperSens 2.0 UDG	DB-1320
DBdirect™ RT-PCR Probe Mix SuperSens 2.0	DB-1321
DBdirect™ RT-PCR Probe Mix SuperSens 2.0 UDG	DB-1322
DBdirect™ RT-PCR SYBR Mix SuperSens 2.0	DB-1323
DBdirect™ RT-PCR SYBR Mix SuperSens 2.0 UDG	DB-1324

### Primers for cDNA Synthesis

Product	Cat No
DB Oligo(dT) <sub>20</sub> Primer	DB-1282
DB Oligo(dT) <sub>20</sub> -VN Primer	DB-1283
DB Random Hexamers	DB-1284

### Fluorescent Dyes

Product	Cat No
AF 488 Dye	DB-4101
AF 555 Dye	DB-4105
AF 568 Dye	DB-4102
AF 594 Dye	DB-4103
AF 647 Dye	DB-4104



### DRUG DISCOVERY

DIANA assay for high throughput screening and selectivity profiling of enzyme inhibitors.



### MONOCLONAL ANTIBODIES

Rabbit recombinant monoclonal antibodies for research and diagnostics use.

### SEPSIS DIAGNOSTICS

Rapid and ultra-sensitive PCR detection of pathogens from blood for sepsis diagnostics.



# Learn more about our other segments



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BIOTECHNOLOGIES



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[lifescience@dianabiotech.com](mailto:lifescience@dianabiotech.com)

DIANA Biotechnologies is a Czech biotech company producing top-quality molecular biology reagents and enzymes for R&D and diagnostics. Powered by a team of top scientists in chemistry, biochemistry and molecular biology, we offer unique proprietary products and technologies not only in molecular biology, but also in engineered proteins & enzymes, custom monoclonal antibody development, kinase profiling and advanced PCR diagnostics.

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