

PCR Mixes & Proteins

Our proprietary **RT-PCR technology** pioneered the **direct detection of pathogens** without the need for prior nucleic acid purification and proved to be **efficient and reliable** in a number of *in vitro* diagnostic tests.

We are now making this unique chemistry available for broader range of applications and offer **RT-PCR and PCR mixes** adjusted to particular application. We also sell **individual PCR enzymes** and our in-house oligonucleotide department offers **custom synthesis of complex oligonucleotides** including large scales and advanced oligo modifications.

RT-PCR Mixes

Name	Cat. No.	One step RT-PCR	Detection method ¹⁾	Multiplex. (TaqMan™)	Th. RT	Hot start	Ultrasens. detection	Direct detection from bio. matrix	Single-cell detection	RT-PCR of long amplicons ³⁾
DB RT-PCR Probe Mix	DB-1262	Yes (real-time)	TaqMan™ probes	++	+++	Yes (aptamer)	++	Not suitable	Not suitable	++
DBdirect™ RT-PCR Probe Mix	DB-1263	Yes (real-time)	TaqMan™ probes	++	+++	Yes (aptamer)	++	++ ²⁾	++	++
DB RT-PCR SYBR Mix	DB-1264	Yes (real-time)	SYBR Green I™ dye	Not suitable	+++	Yes (aptamer)	Not suitable	Not suitable	Not suitable	+
DBdirect™ RT-PCR SYBR Mix	DB-1265	Yes (real-time)	SYBR Green I™ dye	Not suitable	+++	Yes (aptamer)	Not suitable	++ ²⁾	Not suitable	+
DB RT-PCR Probe Mix SuperSens	DB-1266	Yes (real-time)	TaqMan™ probes	+++	+++	Yes (antibody)	+++	Not suitable	Not suitable	++
DBdirect™ RT-PCR Probe Mix SuperSens	DB-1267	Yes (real-time)	TaqMan™ probes	+++	+++	Yes (antibody)	+++	+ ²⁾	+++	++
DB RT-PCR SYBR Mix SuperSens	DB-1268	Yes (real-time)	SYBR Green I™ dye	Not suitable	+++	Yes (antibody)	++	Not suitable	Not suitable	+
DBdirect™ RT-PCR SYBR Mix SuperSens	DB-1269	Yes (real-time)	SYBR Green I™ dye	Not suitable	+++	Yes (antibody)	++	++ ²⁾	+	+

¹⁾ SYBR Green I™ dye is already present in the mix, while TaqMan™ probes specific for the desired target must be added by the user.

²⁾ Suitable for direct detection from biological samples and cell cultures without the need for nucleic acid extraction, but each particular application must be validated by the user for combination of organism and biological matrix. Pretested for some organisms (e.g. human cell culture, selected enveloped viruses) and some biological matrices (e.g. saliva, viral transport media, blood serum). Suitable also for detection of mRNA from single cells from human cell cultures without nucleic acid extraction.

³⁾ Amplicons 100 - 2,000 nts were tested.

PCR Mixes

Name	Cat. No.	PCR type	Detection method	Multiplex. (TaqMan™)	Direct gel loading	Hot start	Ultrasens. detection	Direct detection from bio. matrix ³⁾	Single-cell detect. ⁴⁾	PCR of long amplicons ⁵⁾
DBdirect™ PCR Probe Mix	DB-1270	Real-time	TaqMan™ probes ¹⁾	++	No	Yes (aptamer)	++	+++	++	++
DBdirect™ PCR SYBR Mix	DB-1271	Real-time	SYBR Green I™ dye ¹⁾	Not suitable	No	Yes (aptamer)	Not suitable	+	Not suitable	+
DBdirect™ PCR Gel Mix	DB-1272	Endpoint	Electrophoresis	Not recommended	Yes ²⁾	Yes (aptamer)	+	+	+	+
DBdirect™ PCR Probe Mix SuperSens	DB-1273	Real-time	TaqMan™ probes ¹⁾	+++	No	Yes (antibody)	+++	++	+++	+++
DBdirect™ PCR SYBR Mix SuperSens	DB-1274	Real-time	SYBR Green I™ dye ¹⁾	Not suitable	No	Yes (antibody)	++	+	+	++
DBdirect™ PCR Gel Mix SuperSens	DB-1275	Endpoint	Electrophoresis	Not recommended	Yes ²⁾	Yes (antibody)	++	+	++	++

¹⁾ SYBR Green I™ dye is already present in the mix, while TaqMan™ probes specific for the desired target must be added by the user.

²⁾ Contains yellow and blue dyes to monitor migration process during electrophoresis, and an additive to increase buffer density for direct loading onto agarose gels.

³⁾ Suitable for direct detection from biological samples and cell cultures without the need for nucleic acid extraction, but each particular application must be validated by the user for combination of organism and biological matrix. Pretested for some organisms (e.g. human cell culture, selected enveloped and non-enveloped viruses, selected gram negative and gram positive bacteria) and some biological matrices (e.g. saliva, viral transport media, blood serum).

⁴⁾ Some cell types need separate preincubation step in our Lysis Buffer A (DB-1281; sold separately) to achieve single-cell sensitivity.

⁵⁾ Amplicons 100 - 2,000 nts were tested.

RNase Inhibitors

DB RNase inhibitors are essential for **RNA-related research** in any laboratory. Ensure quality, reproducibility, and protection for your experiments by choosing our compatible inhibitors. The human and porcine variants are standard produced proteins. The bovine variant is new and unique.

Name	Cat. No.	Inhibition of human RNases	Storage stability	Thermal stability	Origin
DB RNase Inhibitor Human	DB-1259	+++	+	+	Recombinant
DB RNase Inhibitor Bovine	DB-1260	++	+++	+++	Recombinant
DB RNase Inhibitor Porcine	DB-1261	++	++	++	Recombinant

Enzymes*

Name	Cat. No.	Package size
DB Reverse Transcriptase	DB-1276	2 kU 10 kU 50 kU
DB AptaTaq DNA Polymerase	DB-1277	0.1 kU 0.5 kU 2.5 kU

* Available in Q4 2023

Oligonucleotides Production

For **standard DNA oligonucleotides production** (primer or TaqMan™ probe) we offer the following scales:

Scale	Guaranteed yield
200 nmol	20 nmol
1,000 nmol	100 nmol
10,000 nmol	1,000 nmol

Dyes and Quenchers:

- All Standard TaqMan™ dyes (FAM, HEX, ROX, TEX, Cy5, Cy5.5)
- BHQ1 and BHQ2 terminal and internal

Reactive oligonucleotides:

- Modification ready for click chemistry
- Thiol Chemistry modifiers
- NHS reactive modifiers

Other modifications of oligonucleotides:

- Non-standard bases
- Spacers

We are ready to provide non-conventional options for any requirements. Modifications listed can be performed on the 3' end, 5' end, or internally.

About DIANA Biotechnologies

We are a **Czech biotechnology company** engaged in research and development in **molecular diagnostics, drug discovery and monoclonal antibody development**.

We also develop and produce **PCR tests for clinical diagnostics (IVDR)**.

We build on a **team of top scientists** with unique expertise in molecular biology, biochemistry, organic and medical chemistry, pharmacology and laboratory automation.



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