MedixMDx Molecular Diagnostics Reagents

Catalog

Medix Biochemica

Quality is in our DNA

Medix Biochemica is synonymous with quality which now extends to our new molecular diagnostics division: MedixMDx

It's not just the quality of our MDx raw materials either. Our team has extensive experience in IVD kit manufacturing optimization and the product development process.

We've been in your shoes

All our team at MedixMDx has expertise in both MDx IVD raw material manufacturing and MDx IVD kit manufacturing.

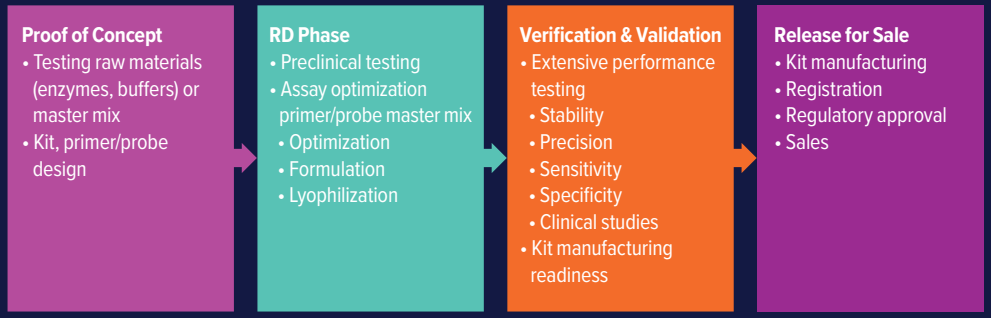
We know your pain points and are ready to support you to ensure your commercial success – faster.

Our reagents and ready-to-use master mixes or customized solutions are manufactured and formulated in line with your IVD assay and product development needs. That means that we reduce the complexity and development time for your project, so your MDx solutions get to market more quickly.

We're with you every step of the way

In addition to providing you with the highest quality raw materials, our team has the experience to support you through the entire MDx IVD journey – from proof of concept right through to release to market, reducing both your product development time and budget.

Our team has experience in all core technologies including:
qPCR
CRISPR
NGS
RT-qPCR
Isothermal amplification



Our Industry Solutions

Endpoint PCR

Full range of endpoint PCR reagents including:
- Hot-start and standard DNA polymerase with buffer
- Convenient master mixes for GC-rich and multiplex reactions

qPCR and RT-qPCR

Optimized ready-to-use solutions for real-time PCR including:
- Probe-based qPCR mixes for standard, fast and ultra-fast applications
- Dye-based qPCR mixes
- Time saving one-step RT-qPCR mixes for quick RNA analysis

Isothermal amplification (iNAAT) & NGS

Optimized ready-to-use solutions for real-time isothermal nucleic acid amplification (iNAAT):
- Fast Bst polymerases
- Single-enzyme RT-LAMP polymerase
- Fast iNAAT reactions for the rapid detection of DNA/RNA targets

Additional enzymes and reagents

Variety of reverse transcriptases (RT) for first strand cDNA synthesis

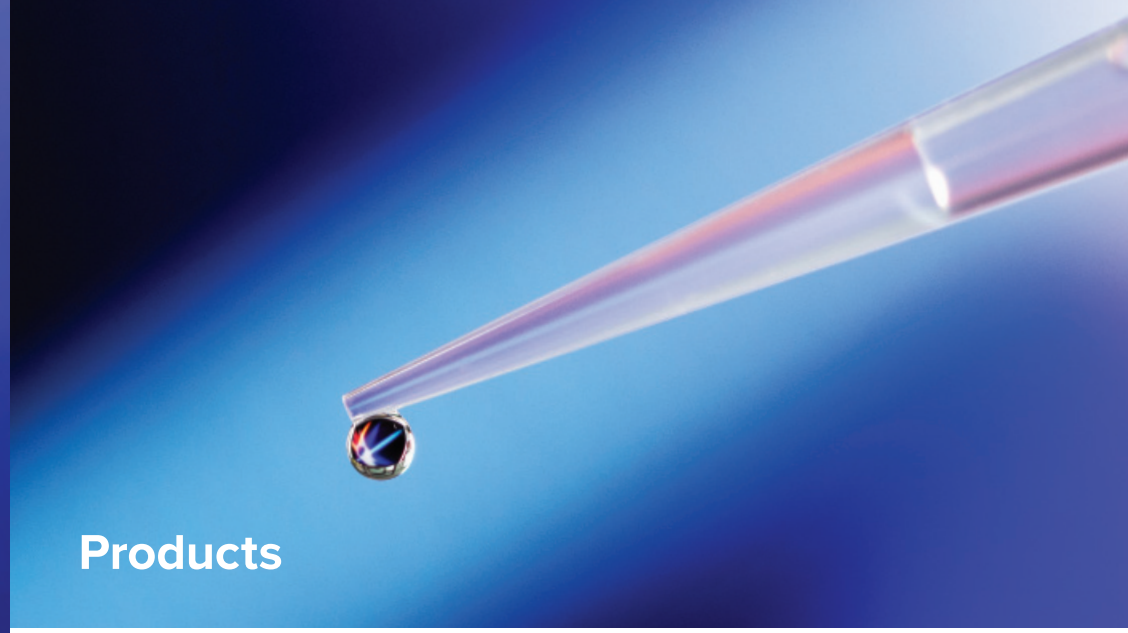
Your MDx Partner From Idea to Market

So, whether you're looking for:
- An alternative supplier to secure your supply options
- To consolidate a fragmented supply base under a trusted partner who is ISO 13485 certified
- More technical support locally in your site
- A partner who can help you develop your assays

MedixMDx is ready to partner with you for all your molecular raw material needs and more.

Our portfolio

If you would like to talk to us about securing solutions not listed today on our portfolio, we can explore how these could be developed for you. We are also happy to discuss longer term R&D collaborations for new products / innovative developments in the molecular test market. Please contact us today.



Products

Enzymes

Taq DNA Polymerase Hot-Start

Taq hotstart DNA polymerase is an aptamer-based fast-start formulated DNA polymerase supplied with a 10x reaction buffer that has been specially designed for optimal PCR performance and DNA polymerase activity. This DNA polymerase is suitable for a wide range of PCR applications. Taq hotstart DNA polymerase has a 5' to 3' exonuclease activity and therefore, can be used for hydrolysis probe-based real-time PCRs.

Catalog #	Pack Sizes	Application
#1101S	400 units	(q)PCR, genotyping
#1101L	4000 units	(q)PCR, genotyping

HiFi DNA Polymerase Hot-Start

HiFi DNA Polymerase Hot-Start is an aptamer-based hot-start, high fidelity hyperthermophilic recombinant DNA polymerase from the archaeon Pyrococcus furiosus. HiFi DNA Polymerase Hot-Start exhibits 5' to 3' polymerase activity and 3' to 5' exonuclease activity. The optimized buffer chemistry facilitates high sensitivity, yield, specificity, robust and rapid polymerase processivity. The enzyme is ideal for long, complex, difficult DNA templates and is resistant to PCR inhibitors. HiFi DNA Polymerase Hot-Start has a lower error rate than standard Taq DNA polymerase (100x) and therefore, is suitable for PCR applications where higher accuracy is needed.

Catalog #	Pack Sizes	Application
#3000S	100 units	(q)PCR
#3000M	500 units	(q)PCR

HiDi® DNA Polymerase

HiDi® stands for High Discrimination of mismatches at the 3'-terminus of primers in PCR. HiDi® DNA polymerase is a highly selective aptamer-based fast-start formulated DNA polymerase variant suitable for SYBR chemistry, specially optimized for assays in which high discrimination is required. HiDi® DNA polymerase efficiently amplifies from primers that are matched at the 3'-end and discriminates primers that are mismatched. By using HiDi® DNA polymerase, less than 10 copies of a mutation can be detected in a background of > 10^4 wild-type copies.

Catalog #	Pack Sizes	Application
9001S	250 units	(q)PCR, genotyping
#9001M	1000 units	(q)PCR, genotyping

Enzymes

HiDi® Taq DNA Polymerase

HiDi® stands for High Discrimination of mismatches at the 3'-terminus of primers in PCR. HiDi® Taq DNA polymerase is a highly selective aptamer-based fast-start formulated DNA polymerase variant, specially optimized for assays in which high discrimination is required. HiDi® Taq DNA polymerase efficiently amplifies from primers that are matched at the 3'-end and discriminates primers that are mismatched. HiDi® Taq variant has a 5' to 3' exonuclease activity and therefore, can be used for hydrolysis probe-based real-time PCRs. By using HiDi® DNA Taq polymerase, less than 10 copies of a mutation can be detected in a background of > 104 wild-type copies.

Catalog #	Pack Sizes	Application
#9201S	250 units	(q)PCR, genotyping
#9201M	1000 units	(q)PCR, genotyping

HighScript Reverse Transcriptase

HighScript Reverse Transcriptase is a modified version of MMLV reverse transcriptase with noticeable thermostability and high enzymatic activity. This enzyme is offered as a blend with an RNase inhibitor to prevent RNA degradation. HighScript Reverse Transcriptase together with enhanced buffer chemistry enables fast, efficient and accurate synthesis of the cDNA molecule.

Catalog #	Pack Sizes	Application
#6601S	10,000 units	RT-(q)PCR
#6601M	40,000 units	RT-(q)PCR

RevTaq RT-PCR DNA Polymerase

RevTaq RT-PCR DNA polymerase is an engineered, extremely thermostable, aptamer-based fast-formulated reverse transcriptase and combined DNA polymerase with a half-life at 95°C of > 40 min. This enzyme allows reverse transcription reactions at high temperatures, minimizing the problems encountered with strong secondary structures in RNA. RevTaq RT-PCR DNA polymerase allows "zero-step" RT-PCRs directly from RNA templates without an isothermal reverse transcription step, as reverse transcription takes place simultaneously with DNA amplification during the cycled PCR elongation step. RevTaq RT-PCR DNA polymerase is the pure, reverse transcription active enzyme ingredient of our Volcano3G® RT-PCR Master Mixes.

Catalog #	Pack Sizes	Application
#6500S	100 reactions	RT-(q)PCR, (q)PCR
#6500M	500 reactions	RT-(q)PCR, (q)PCR

Enzymes

Isotherm3G DNA Polymerase

Isotherm3G is a mesophilic DNA polymerase, perfectly suited for isothermal amplifications. Isotherm3G DNA Polymerase utilizes an aptamer-based warm-start feature to prevent false amplification at low temperatures. Isotherm3G DNA Polymerase has been mutated to have improved reverse transcription activity. It synthesizes DNA from both DNA and RNA templates with a high strand displacement activity allowing simplified one-enzyme RT-LAMP reactions. Isotherm3G exhibits 5' to 3' polymerase activity but lacks any exonuclease activity. The product components have been optimized and are perfectly suited for loop-mediated isothermal amplification (LAMP) with recommended reaction temperature at 65°C.

Catalog #	Pack Sizes	Application
#8701S	1600 units	Isothermal amplification
#8701M	8000 units	Isothermal amplification

Fast Bst Polymerase

Fast Bst Polymerase is a recombinant DNA polymerase expressed by Geobacillus stearothermophilus. The DNA polymerase displays high strand displacement activitiy, exhibits 5' to 3' polymerase activity, but lacks 5' to 3' exonuclease activity. Fast Bst Polymerase is tolerant to inhibitors, enabling rapid and robust isothermal nucleic acid amplification reactions at a constant temperature. The typical reaction temperature is 65°C.

Catalog #	Pack Sizes	Application
#8301S	1600 units	Isothermal amplification
#8301M	8000 units	Isothermal amplification

Fast Bst Polymerase with Fluorescence

Fast Bst Polymerase is a recombinant DNA polymerase expressed by Geobacillus stearothermophilus. The DNA polymerase displays high strand displacement activity, exhibits 5' to 3' polymerase activity, but lacks 5' to 3' exonuclease activity. Fast Bst Polymerase is tolerant to inhibitors, enabling rapid and robust isothermal nucleic acid amplification reactions at a constant temperature. The typical reaction temperature is 65°C. Addition of an intercalating dye allows the reaction to be monitored using a real-time PCR instrument.

Catalog #	Pack Sizes	Application
#8401S	1600 units	Isothermal amplification
#8401M	8000 units	Isothermal amplification

Master Mix

qProbe Mix Separate ROX

qProbe Mix Separate ROX is a universal one-step probe mix for robust, sensitive, and fast qPCR. The mix uses state-of-the-art technologies with an antibody-regulated hot-start Taq DNA polymerase for real-time PCR amplification of single or multiplex DNA targets. qProbe Mix is compatible with several probes such as TaqMan® and Scorpions®.

Catalog #	Pack Sizes	Application
#2401S	100 reactions	(q)PCR
#2401M	500 reactions	(q)PCR

qGreen Mix Separate ROX

qGreen Mix Separate ROX is a universal intercalating dye mix for robust, sensitive, and fast qPCR. qGreen Mix uses state-of-the-art technologies with an antibody-regulated hot-start Taq polymerase and intercalating dye for real-time PCR amplification. The optimized buffer chemistry and PCR enhancers and stabilizers enable rapid and sensitive qPCR.

Catalog #	Pack Sizes	Application
#2301S	100 reactions	(q)PCR
#2301M	500 reactions	(q)PCR

Taq 2x PCR Master Mix

Taq 2x PCR Master Mix is a ready-to-use reaction mix for sensitive, robust and fast PCR. The combination of aptamer-based fast-start Taq DNA polymerase, optimized reaction buffer and ulrapure dNTPs ensures consistent results, rapid set-up time and lower risk of pipetting errors. The Taq DNA polymerase has a 5' to 3' exonuclease activity and therefore, can be used for hydrolysis probe-based real-time PCRs. It provides a robust PCR performance for a wide range of PCR applications in all standard PCR cyclers.

Catalog #	Pack Sizes	Application
#2001	500 reactions	(q)PCR

PlexTaq® 5x qPCR Multiplex Master Mix

PlexTaq® 5x qPCR Multiplex Master Mix is a ready-to-use reaction mix for sensitive and reliable probe-based multiplex qPCR in all standard real-time PCR cyclers. The combination of aptamer-based fast-start Taq DNA polymerase, optimized reaction buffer and ultrapure dNTPs, ensures consistent results, rapid set-up time and lower risk of pipetting errors. 5x concentration makes this mix optimal for multiplexing application, leaving more room for primers and probes. NOW LYO-READY: fully compatible with lyophilization, contains all necessary excipients for freeze-drying.

Catalog #	Pack Sizes	Application
#4000S	100 reactions	(q)PCR
#4000M	500 reactions	(q)PCR

Master Mix

HiDi® 2x PCR Master Mix

HiDi® stands for High Discrimination of mismatches at the 3'-terminus of primers in PCR. HiDi® 2x PCR Master Mix is a ready-to-use master mix specially optimized for assays in which high discrimination with SYBR chemistry is required. The combination of highly selective aptamer-based fast-start formulated HiDi® DNA polymerase and an optimized buffer with ultrapure dNTPs ensures simple reaction setup and relible results. HiDi® DNA polymerase efficiently amplifies from primers that are matched at the 3'-end and discriminates primers that are mismatched. By using HiDi® DNA polymerase, less than 10 copies of a mutation can be detected in a background of > 104 wild-type copies.

Catalog #	Pack Sizes	Application
#9101S	100 reactions	(q)PCR, genotyping
#9101M	500 reactions	(q)PCR, genotyping

HiDi® Taq 2x PCR Master Mix

HiDi® stands for High Discrimination of mismatches at the 3'-terminus of primers in PCR. HiDi® Taq 2x PCR Master Mix is a ready-to-use master mix specially optimized for assays in which high discrimination is required. The combination of highly selective aptamer-based fast-start formulated HiDi® Taq DNA polymerase and an optimized buffer with ultrapure dNTPs ensures simple reaction setup and reliable results. HiDi® Taq DNA polymerase efficiently amplifies from primers that are matched at the 3'-end and discriminates primers that are mismatched. The variant has a 5' to 3' exonuclease activity and therefore, can be used for hydrolysis probe-based real-time PCRs. By using HiDi® Taq DNA polymerase, less than 10 copies of a mutation can be detected in a background of >104 wild-type copies.

Catalog #	Pack Sizes	Application
#4200S	100 reactions	(q)PCR, genotyping
#4200M	500 reactions	(q)PCR, genotyping

qRT-Probe Mix Separate ROX

qRT-Probe Mix is a universal one-step probe mix for robust, sensitive, and fast RT-qPCR. The mix uses state-of-the-art technologies with an antibody-regulated hot-start Taq DNA polymerase and reverse transcriptase for efficient cDNA synthesis and real-time. The kit includes a ROX additive and an efficient thermostable reverse transcriptase with an RNase inhibitor (RTase Amp) to prevent degradation of RNA templates by RNases. qRT-Probe Mix is compatible with several probes such as TaqMan® and Scorpions®.

Catalog #	Pack Sizes	Application
#6701S	100 reactions	RT-(q)PCR
#6701M	500 reactions	RT-(q)PCR

Master Mix

HiPlex qRT-Probe Mix

HiPlex qRT-Probe Mix is an advanced formulated one-step qRT-PCR probe mix for highly sensitive, rapid, and robust detection of RNA target templates. HiPlex qRT-Probe Mix uses state of-the-art technologies with an antibody-regulated hot-start Taq DNA polymerase and ultra-sensitive reverse transcriptase for efficient cDNA synthesis and real-time PCR amplification. HiPlex qRT-Probe Mix is formulated as a 4x mix, which enables extensive multiplexing and addition of larger volumes of RNA templates to reactions. It includes an efficient thermostable reverse transcriptase with RNase inhibitor to prevent degradation of RNA templates by RNases. HiPlex qRT-Probe Mix is compatible with several probes such as TaqMan® and Scorpions®.

Catalog #	Pack Sizes	Application
#6801S	200 reactions	RT-(q)PCR
#6801M	600 reactions	RT-(q)PCR

Volcano3G® RT-PCR Probe 2x Master Mix

Volcano3G® RT-PCR Probe 2x Master Mix has all necessary components for sensitive and reliable RT-qPCRs. It includes an aptamer-based fast-start formulated enzyme blend of a robust Taq DNA polymerase and an engineered thermostable Volcano3G® DNA polymerase with reverse transcriptase activity. With the combination of optimized reaction buffer, ultrapure dNTPs and a blue stain for visualization, Volcano3G® RT-PCR Probe 2x Master Mix reduces the need for sample extraction and sample lysis. Volcano3G® RT-PCR Probe 2x Master Mix enables amplification of RNA target sequences with quick and easy PCR protocols, even including "zero-step" amplification.

Catalog #	Pack Sizes	Application
#6101S	100 reactions	RT-(q)PCR, (q)PCR
#6101M	500 reactions	RT-(q)PCR, (q)PCR

Volcano3G® RT-PCR Probe 2x Master Mix (+Low ROX)

Volcano3G® RT-PCR Probe 2x Master Mix has all necessary components for sensitive and reliable RT-qPCRs. It includes an aptamer-based fast-start formulated enzyme blend of a robust Taq DNA polymerase and an engineered thermostable Volcano3G® DNA polymerase with reverse transcriptase activity. With the combination of optimized reaction buffer, ultrapure dNTPs and a blue stain for visualization, Volcano3G® RT-PCR Probe 2x Master Mix reduces the need for sample extraction and sample lysis. Volcano3G® RT-PCR Probe 2x Master Mix enables amplification of RNA target sequences with quick and easy PCR protocols, even including "zero-step" amplification. Supplied low high ROX concentration (50 nM).

Catalog #	Pack Sizes	Application
#6201LoS	100 reactions	RT-(q)PCR, (q)PCR
#6201LoM	500 reactions	RT-(q)PCR, (q)PCR

Master Mix

Volcano3G® RT-PCR Probe 2x Master Mix (+High ROX)

Volcano3G® RT-PCR Probe 2x Master Mix has all necessary components for sensitive and reliable RT-qPCRs. It includes an aptamer-based fast-start formulated enzyme blend of a robust Taq DNA polymerase and an engineered thermostable Volcano3G® DNA polymerase with reverse transcriptase activity. With the combination of optimized reaction buffer, ultrapure dNTPs and a blue stain for visualization, Volcano3G® RT-PCR Probe 2x Master Mix reduces the need for sample extraction and sample lysis. Volcano3G® RT-PCR Probe 2x Master Mix enables amplification of RNA target sequences with quick and easy PCR protocols, even including “zero-step” amplification. Supplied with high ROX concentration (500 nM).

Catalog #	Pack Sizes	Application
#6201HiS	100 reactions	RT-(q)PCR, (q)PCR
#6201HiM	500 reactions	RT-(q)PCR, (q)PCR

Fast Bst Mix

Fast Bst Mix is a ready-to-use mix containing recombinant DNA polymerase expressed by Geobacillus stearothermophilus. The Bst DNA polymerase displays high strand displacement activity, exhibits 5’ to 3’ polymerase activity, but lacks 5’ to 3’ exonuclease activity. Fast Bst Mix is tolerant to inhibitors, enabling rapid and robust isothermal nucleic acid amplification reactions at a constant temperature. The typical reaction temperature is 65°C. Addition of an intercalating dye allows the reaction to be monitored using a real-time PCR instrument.

Catalog #	Pack Sizes	Application
#8501S	100 reactions	RT-(q)PCR, (q)PCR
#8501M	500 reactions	RT-(q)PCR, (q)PCR

Fast Bst RT Mix

Fast Bst RT Mix is a ready-to-use mix containing recombinant DNA polymerase expressed by Geobacillus stearothermophilus. The Bst DNA polymerase displays high strand displacement activity, exhibits 5’ to 3’ polymerase activity, but lacks 5’ to 3’ exonuclease activity. Fast Bst RT Mix also contains an efficient thermostable reverse transcriptase with an RNase inhibitor (RTase Amp) to prevent degradation of RNA templates by RNases. Fast Bst RT Mix is tolerant to inhibitors, enabling rapid and robust isothermal nucleic acid amplification reactions at a constant temperature. The typical reaction temperature is 65°C. Addition of an intercalating dye allows the reaction to be monitored using a real-time PCR instrument.

Catalog #	Pack Sizes	Application
#8601S	100 reactions	Isothermal amplification
#8601M	500 reactions	Isothermal amplification

Lyo Ready

qPCR Lyo-Ready Mix

MqPCR Lyo-Ready Mix is a universal probe mix that allows robust, sensitive, and fast qPCR for the detection of single or multiplex DNA targets. qPCR Lyo-Ready Mix contains optimized excipients, buffer, PCR enchancers and an antibody-regulated hot-start Taq DNA polymerase and is ready to be lyophilized to produce stable reagents at room temperature. Upon addition of target specific primers/probes to the master mix, the mixture can be lyophilized directly, without the need to add additional excipients. qPCR Lyo-Ready Mix is compatible with several probes such as TaqMan® and Scorpions®.

Catalog #	Pack Sizes	Application
#4401S	500 reactions	(q)PCR
#4401M	10,000 reactions	(q)PCR

RT-qPCR Lyo-Ready Mix

RT-qPCR Lyo-Ready Mix is a universal probe mix that allows robust, sensitive, and fast RT-qPCR for the detection of single or multiplex RNA or DNA targets. RT-qPCR Lyo-Ready Mix contains optimized excipients, buffer, PCR enchancers and an antibody-regulated hot-start Taq DNA polymerase and is ready to be lyophilized to produce stable reagents at room temperature. RT-qPCR Lyo-Ready Mix is ready to be lyophilized to produce stable reagents at room temperature. Upon addition of target specific primers/probes and reverse transcriptase (RTase Lyo) to the master mix, the mixture can be lyophilized directly, without the need to add additional excipients. RT-qPCR Lyo-Ready Mix is compatible with several probes such as TaqMan® and Scorpions®.

Catalog #	Pack Sizes	Application
#4501S	500 reactions	RT-(q)PCR
#4501M	10,000 reactions	RT-(q)PCR

Freeze Dried

qPCR Probe 2x LyoCake Master Mix (Freeze-Dried)

qPCR Probe 2x Lyocake Master Mix is a ready-to-use reaction mix for sensitive and reliable probe-based qPCR in all standard real-time PCR cyclers. It includes an engineered, aptamer-based fast-start DNA polymerase, optimized reaction buffer and ultrapure dNTPs. Freeze-dried qPCR Probe 2x Lyocake Master Mix can be stored at room temperature.

Catalog #	Pack Sizes	Application
#9801lyoS	80 reactions	(q)PCR
#9801lyoM	400 reactions	(q)PCR

qPCR Probe LyoBeads, Pre-Dispensed (High Profile 0.2 mL)

qPCR Probe LyoBeads are ready-to-use, freeze-dried master mix beads with all necessary components for rapid and sensitive PCR. The combination of aptamer-based fast-start formulated DNA polymerase, optimized reaction buffer and ultrapure dNTPs in a freeze-dried format results in a cost efficient and ecological master mix that can be rehydrated within seconds in any aqueous solutions. LyoBeads can be shipped and stored at room temperature. Supplied in high profile PCR tubes (0.2 mL).

Catalog #	Pack Sizes	Application
#2201HiPS	96 reactions	(q)PCR
#2201HiPM	5x96 reactions	(q)PCR

qPCR Probe LyoBeads, Pre-Dispensed (Low Profile 0.1 mL)

qPCR Probe LyoBeads are ready-to-use, freeze-dried master mix beads with all necessary components for rapid and sensitive PCR. The combination of aptamer-based fast-start formulated DNA polymerase, optimized reaction buffer and ultrapure dNTPs in a freeze-dried format results in a cost efficient and ecological master mix that can be rehydrated within seconds in any aqueous solutions. LyoBeads can be shipped and stored at room temperature. Supplied in low profile PCR tubes (0.1 mL).

Catalog #	Pack Sizes	Application
#2201LoPS	96 reactions	(q)PCR
#2201LoPM	5x96 reactions	(q)PCR

Kit

DirectBlood Genotyping PCR Kit

DirectBlood Genotyping PCR Kit enables sensitive, rapid and reproductible real-time PCR detection of a wide range of SNPs from EDTA blood samples without prior DNA extraction. 2x DirectBlood Genotyping PCR Mix includes an engineered, aptamer-based fast-start DNA polymerase, optimized reaction buffer and ultrapure dNTPs.

Catalog #	Pack Sizes	Application
#5000S	100 reactions	Genotyping, direct (q)PCR
#5000M	500 reactions	Genotyping, direct (q)PCR

Discover our Molecular Diagnostics Reagents Portfolio

Application Description

(q)PCR

Quantitative real-time PCR (qPCR) builds on the same principles as conventional PCR. However, qPCR uses fluorescent reporter molecules to allow quantification of amplified products. Common approaches to generate a fluorescent signal used for measuring DNA quantity in this technique are to use either hydrolysis probes such as TaqMan® probes, or a double-stranded DNA binding dye such as SYBR® Green dye. Since the products are detected as the reaction proceeds, qPCR offers a wider dynamic range of analysis than conventional PCR; from a single copy to around 1011 copies are detectable within a single run. This technique is commonly used for amplifying DNA, which can then be used for gene cloning, sequencing, gene manipulation and eventually disease diagnosis.

RT-(q)PCR

RT-qPCR, or quantitative reverse transcription PCR, combines the effects of reverse transcription and quantitative PCR or real-time PCR to amplify and detect specific RNA targets. Common approaches to generate a fluorescent signal used for measuring DNA quantity in this technique are to use either hydrolysis probes such as TaqMan® probes, or a double-stranded DNA binding dye such as SYBR® Green dye. The process of RT-qPCR is performed by reverse transcription of total RNA or mRNA to complementary DNA (cDNA) by the enzyme reverse transcriptase, followed by amplification and detection of specific targets of this cDNA using quantitative real-timePCR (qPCR). RT-qPCR is commonly used for quantifying gene expression levels, validating RNA interference (RNAi), and detecting pathogens such as viruses.

NGS

Next-Generation Sequencing (NGS) is a high-throughput methodology that enables rapid sequencing of the base pairs in DNA or RNA samples. NGS supports a broad range of applications, including gene expression profiling, chromosome counting, detection of epigenetic changes, and molecular analysis. NGS methods have evolved from the first-generation Sanger sequencing to offer different platforms with different chemistries and very high-throughput instruments and tunable resolution. Today's powerful and flexible nature of NGS offers diverse applications from whole-genome sequencing made faster and easier to targeted sequencing on a subset of genes complete within just a few hours.

Isothermal Amplification

Isothermal amplification methods can amplify nucleic acids exponentially at constant temperature, eliminating the need for thermocycler equipment. Because the DNA strands are not heat-denatured, all isothermal methods rely on an alternative approach to enable primer binding and initiation of the amplification reaction: a polymerase with high strand-displacement activity. To detect RNA , a reverse transcriptase is added to the reaction for a pre-amplification reverse transcription step. Isothermal amplification offers high specificity. Isothermal amplification chemistry has been applied to diagnostics with great success and is utilized in several commercial molecular diagnostic platforms, serving large testing centers and point-of-care markets.

Application Description

Genotyping

Genotyping is the technology that detects genetic differences by comparing a DNA sequence to that of another sample or a reference sequence. It identifies small variations in the genetic sequence within populations, such as single-nucleotide polymorphisms (SNPs). Those SNPs are single base-pair changes in DNA that occur at specific places in the genome. SNPs are the most common type of genetic variation in humans, they can explain changes in phenotypic traits, and pathological changes in genetic diseases. SNP genotyping has many applications including disease association, population genomics, trait selection in agriculture and antibiotic-resistance detection in bacteria. The use of quantitative real-time PCR enables a swift screening of known SNPs.

Direct (q)PCR

Direct (q)PCR permits classical PCR amplification directly from the small amount of samples without DNA extraction and purification. Direct (q)PCR enables to quantify and detect DNA directly from a cell suspension, or a cell lysate, without a need of purification steps. It usually requires to pre-treat the cells then to add the cell suspension directly to the (q)PCR reaction mix. From there, the sample is ready to place in a real-time cycler, and normal (q)PCR protocol is applied. Similar to conventional (q)PCR, the DNA quantity is measured using either hydrolysis probes such as TaqMan® probes, or a double-stranded DNA binding dye such as SYBR® Green dye. Direct (q)PCR is best suited for the amplification of DNA from a variety of samples such as blood, saliva, tissue, cultured cells or plant.

Direct RT-(q)PCR

Direct RT-(q)PCR permits classical RT-(q)PCR directly from the small amount of samples without RNA extraction and purification. Direct RT-(q)PCR enables to quantify and detect RNA directly from a cell suspension, or a cell lysate, without a need of purification steps. It usually requires to simply detach the cells then to add the cell suspension directly to the RT-(q)PCR reaction mix. From there, the sample is ready to place in a real-time cycler, and normal RT-(q)PCR protocol is applied. Similar to RT-(q)PCR, the DNA quantity is measured using either hydrolysis probes such as TaqMan® probes, or a double-stranded DNA binding dye such as SYBR® Green dye. Direct RT-(q)PCR is best suited for the amplification of RNA from a variety of samples such as blood, saliva, tissue, cultures cells or plant.

Notes

Notes

Medix Biochemica

Ordering and product information:
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