



## PCR Reagents

# PCR REAGENTS

## PCR Selection Guide

|  | PCR STANDARD | FAST PCR | HIGH %GC | COMPLEX TARGETS | LARGE FRAGMENTS | HIGH FIDELITY | ISOTHERMAL PCR | QUANTITATIVE PCR | SNP DETECTION | DIRECT PCR |
|--|--------------|----------|----------|-----------------|-----------------|---------------|----------------|------------------|---------------|------------|
| <b>STOUT™ Taq DNA Polymerase</b><br>(TBZ0201-02, TBK0023-24)   | ✓            |          |          |                 |                 |               |                |                  |               |            |
| <b>STOUT™ Taq DNA Polymerase Master Mix 2x</b><br>(TBK0029-30) | ✓            |          |          |                 |                 |               |                |                  |               |            |
| <b>STOUT™ Red PCR Master Mix 2x</b><br>(TBK0026-27)            | ✓            |          |          |                 |                 |               |                |                  |               |            |
| <b>STOUT™ Green PCR Master Mix 2x</b><br>(TBK0032-33)          | ✓            |          |          |                 |                 |               |                |                  |               |            |
| <b>Native Taq DNA Polymerase</b><br>(TBZ0360-62)               | ✓            |          |          |                 |                 |               |                |                  |               |            |
| <b>STOUT™ FAST DNA Polymerase</b><br>(TBK1011-12)              |              | ✓        |          |                 |                 |               |                |                  |               |            |
| <b>WARM™ HotStart Taq DNA polymerase</b><br>(TBK0036-37)       |              |          | ✓        | ✓               |                 |               |                |                  |               |            |
| <b>WARM™ HotStart PCR Master Mix</b><br>(TBK0042-43)           |              |          | ✓        | ✓               |                 |               |                |                  |               |            |
| <b>WARM™ FAST HotStart Taq DNA Polymerase</b><br>(TBK1026-27)  |              | ✓        | ✓        |                 |                 |               |                |                  |               |            |
| <b>TOO™ LONG DNA Polymerase</b><br>(TBK0046-47)                |              |          |          |                 | ✓               |               |                |                  |               |            |
| <b>TOO™ LONG DNA Polymerase Master Mix</b><br>(TBK0049-50)     |              |          |          |                 | ✓               |               |                |                  |               |            |
| <b>Pfu DNA Polymerase</b><br>(TBK0086-87)                      |              |          |          |                 |                 | ✓             |                |                  |               |            |
| <b>TIARIS™ FAST High Fidelity DNA Polymerase</b><br>(TBK1034)  |              |          |          |                 |                 | ✓             |                |                  |               |            |
| <b>TIARIS™ LAMP BstI DNA Polymerase</b><br>(TBK0083-84)        |              |          |          |                 |                 |               | ✓              |                  |               |            |
| <b>Q-PLUS™ Green Real Time qPCR Master Mix</b><br>(TBK0056-59) |              |          |          |                 |                 |               |                | ✓                |               |            |
| <b>Q-PLUS™ Probe Real Time qPCR Master Mix</b><br>(TBK0071-74) |              |          |          |                 |                 |               |                | ✓                |               |            |
| <b>TIARIS™ SNP DNA Polymerase</b><br>(TBZ0357-08)              |              |          |          |                 |                 |               |                |                  | ✓             |            |
| <b>TIARIS™ SNP DNA Polymerase Kit</b><br>(TBK0061, TBK0062)    |              |          |          |                 |                 |               |                |                  | ✓             |            |
| <b>TIARIS™ Tissue Direct PCR</b><br>(TBK1015-16)               |              |          |          |                 |                 |               |                |                  |               | ✓          |
| <b>TIARIS™ Blood Direct PCR</b><br>(TBK1018-19)                |              |          |          |                 |                 |               |                |                  |               | ✓          |
| <b>TIARIS™ Plant Direct PCR</b><br>(TBK1021)                   |              |          |          |                 |                 |               |                |                  |               | ✓          |
| <b>TIARIS™ Body Fluid Direct PCR</b><br>(TBK1023)              |              |          |          |                 |                 |               |                |                  |               | ✓          |

## STANDARD PCR

### STOUT™ Recombinant Taq DNA Polymerase

STOUT™ Recombinant Taq DNA Polymerase is a thermostable polymerase from *Thermus aquaticus* produced in *Escherichia coli*. Highly purified the enzyme has a strong 5' to 3' polymerase activity. It has a weak 5' to 3' exonuclease activity while 3' to 5' exonuclease activity is absent. The enzyme is presented with all the components shipped in separate vials (*with and without dNTPs*) and in an optimized formulation to enable successful amplification in a process with reduced manipulation. It is used to end-point PCR reactions.



**STOUT™ RECOMBINANT TAQ  
DNA POLYMERASE**

Include:

- STOUT™ Recombinant Taq DNA Polymerase, 5U/  $\mu$ L
- STOUT™ PCR Buffer, 10x
- $MgCl_2$  25 mM



**STOUT™ RECOMBINANT TAQ  
DNA POLYMERASE KIT**

Include:

- STOUT™ Recombinant Taq DNA Polymerase, 5U/  $\mu$ L
- STOUT™ PCR Buffer, 10x
- $MgCl_2$  25 mM
- High-Q™ dNTPs 10 mM TOTAL



**STOUT™ RECOMBINANT TAQ  
DNA POLYMERASE MASTER MIX**

Include:

- STOUT™ Recombinant Taq DNA Polymerase Master Mix, 2x
- PCR Grade Water, nuclease free

### Features

- Optimal amplification length:  $\leq 5$  kb.
- **High thermostability**, the enzyme half-life at 94 °C is 40 minutes.
- Addition without template of **3' adenine at the end of PCR fragment**.
- **Non proofreading enzyme**.
- **Immediate activation**.
- Amplification rate, 1 minute per kb.

### Applications

- Daily research: standard PCR for targets up 5 kb, recombinant clone or cell line checking, etc.
- Generation of PCR fragments for TA cloning.
- DNA sequencing.

| REFERENCES | DESCRIPTION  | FORMAT  |
|------------|--|---------|
| TBZ0201    | STOUT™ RECOMBINANT TAQ DNA POLYMERASE, 5 U/ $\mu$ L  | 500 U   |
| TBZ0202    | STOUT™ RECOMBINANT TAQ DNA POLYMERASE, 5 U/ $\mu$ L  | 1000 U  |
| TBK0023    | STOUT™ RECOMBINANT TAQ DNA POLYMERASE KIT            | 500 U   |
| TBK0024    | STOUT™ RECOMBINANT TAQ DNA POLYMERASE KIT            | 1000 U  |
| TBK0029    | STOUT™ RECOMBINANT TAQ DNA POLYMERASE MASTER MIX, 2x | 200 rxn |
| TBK0030    | STOUT™ RECOMBINANT TAQ DNA POLYMERASE MASTER MIX, 2x | 400 rxn |



#### Complementary Products

- ✓ HIGH-Q™ Agarose-LE (TBR0120, TBR0121, TBR0122)
- ✓ TAE Buffer 10x (TBB0355, TBB0356)
- ✓ TIARIS™ Ruler 100-1000 bp (TBR0237, TBR0238)
- ✓ COBAL™ Loading Buffer 6x (TBB0321)

## STOUT™ Red PCR Master Mix 2.5x

STOUT™ Red PCR Master Mix is an optimized formulation to enable successful amplification in a process with reduced manipulation. The formula contains MgCl<sub>2</sub>, pure dNTPs, PCR enhancer and our highly purified thermostable STOUT™ Recombinant Taq DNA Polymerase. The master mix is a dense solution (2.5x concentrated) for direct loading of PCR products onto agarose gel.



### Features

- **Ready to use.**
- **Includes a red tracking dye** to monitor the sample electrophoresis.
- All STOUT™ Recombinant Taq DNA Polymerase characteristics:
  - High thermostability, the enzyme half-life at 94°C is 40 minutes.
  - Optimal amplification length: ≤ 5 kb.
  - Addition without template of 3' adenine at the end of PCR fragment.
  - Non proofreading enzyme, error rate 1–20 × 10<sup>-5</sup> errors/ bp per cycle.
  - Immediate activation.
  - Amplification rate, 1 minute per kb.

### Applications

- Optima formulation to use in routine PCR, requiring to add only specific primers and template.
- Generation of PCR fragments for TA cloning.
- Molecular screening by PCR.

| REFERENCES | DESCRIPTION                     | FORMAT  |
|------------|---------------------------------|---------|
| TBK0026    | STOUT™ RED PCR MASTER MIX 2.5 x | 200 rxn |
| TBK0027    | STOUT™ RED PCR MASTER MIX 2.5 x | 400 rxn |
| TBK0032    | STOUT™ GREEN PCR MASTER MIX 2x  | 200 rxn |
| TBK0033    | STOUT™ GREEN PCR MASTER MIX 2x  | 400 rxn |

## STOUT™ Green PCR Master Mix 2x

STOUT™ Green PCR Master Mix (2x) is an optimized formulation to enable successful amplification in a process with reduced manipulation. The formula contains MgCl<sub>2</sub>, pure dNTPs, PCR enhancer and our highly purified thermostable STOUT™ Recombinant Taq DNA Polymerase. The master mix is a dense solution (2x concentrated) for direct loading of PCR products onto agarose gel.

### Features

- **Ready to use.**
- Includes **two tracking dyes** to monitor the sample electrophoresis.
- All STOUT™ Recombinant Taq DNA polymerase characteristics.

### Applications

- Daily research: standard PCR for targets up to 5 kb, recombinant clone or cell line checking, etc.
- Generation of PCR fragments for TA cloning.

## Native Taq Polymerase (DNA Free Polymerase)



Native Taq polymerase is a non-recombinant enzyme produced in *Thermus aquaticus*. The enzyme is suitable to amplify *Escherichia coli* targets without interference of recombinant strain genetic material. It is a highly processive 5' - 3' DNA polymerase, lacking 3' - 5' exonuclease activity.

### Features

- *E.coli* gDNA Free Enzyme.
- Optimal amplification length: 7 kb.
- **Highly processive** polymerase.
- **Lack 3' - 5' exonuclease activity.**

### Applications

- PCR of *Escherichia coli* DNA.
- Any applications based on bacterial 16S analysis.

## FAST PCR

### STOUT™ Fast DNA Polymerase Kit

STOUT™ FAST DNA Polymerase is a robust enzyme with a characteristic extreme speed amplification rate. The extreme speed of STOUT™ FAST DNA polymerase allows the use of an extension rate of 4-8 kb/min, making this the ideal choice for consistent results in fast routine PCR amplifications with excellent yield and consistency. The kit includes in separate vials: the enzyme and the reaction buffer containing MgCl<sub>2</sub>, ultrapure dNTPs, enhancers and stabilizers, optimized to increased PCR success rates.

### Features

- Extension Rate 4-8 kb/min
- Addition without template of **3' adenine at the ends of PCR** fragment.
- **Immediate activation.**
- Include **ultrapure dNTPs.**

### Applications

- Faster Routine PCR
- Generation of PCR fragments for TA cloning.

| REFERENCES | DESCRIPTION           | FORMAT |
|------------|-----------------------|--------|
| TBZ0360    | NATIVE TAQ POLYMERASE | 250 U  |
| TBZ0361    | NATIVE TAQ POLYMERASE | 500 U  |
| TBZ0362    | NATIVE TAQ POLYMERASE | 1000 U |

| REFERENCES | DESCRIPTION              | FORMAT |
|------------|--------------------------|--------|
| TBK1011    | STOUT™ FAST DNA          | 500 U  |
| TBK1012    | POLYMERASE KIT           | 2500 U |
| TBK1026    | WARM™ FAST HOT-START DNA | 500 U  |
| TBK1027    | POLYMERASE KIT           | 2500 U |

## HIGH GC CONTENT & COMPLEX STRUCTURE AMPLIFICATION

### WARM™ Hot-Start DNA Polymerase Kit

WARM™ Hot-Start Taq DNA polymerase is a thermostable polymerase from *Thermus aquaticus* produced in *Escherichia coli* reversibly inactivated by antibody binding. Once the enzyme is activated it has a strong 5' to 3' polymerase activity.

#### Features

- **Enhanced specificity and sensibility**, amplifies low copy number targets with reduced non-specific.
- Thermostable half-life at 94 °C is 40 minutes.
- **Suitable for TA cloning purposes**, the enzyme adds 3' adenine at the end of PCR fragment.
- Activation controlled, **inactive at low temperature** and fully activated at temperature > 70°C.
- Error Rate 1–20×10<sup>-5</sup> errors/ bp per cycle.

#### Applications

- Daily research: standard PCR for targets up 5 kb, recombinant clone or cell line checking, etc.
- Generation of PCR fragments for TA cloning.
- DNA labelling due to capacity to incorporate modified nucleotides.
- Real time PCR to quantify DNA or cDNA targets, gene expression, SNPs.

### WARM™ Hot-Start PCR Master Mix

WARM™ Hot-Start PCR Master Mix is an optimized formulation to enable successful amplification in a process with reduced manipulation. The formula includes the hot-start enzyme WARM™ START Taq DNA polymerase and highly purity dNTPs.

#### Features

- **Ready to use**, avoiding mistakes in PCR reaction preparation.
- All **characteristics of WARM™ Hot-Start DNA Polymerase**.

| REFERENCES | DESCRIPTION                    | FORMAT  |
|------------|--------------------------------|---------|
| TBK0036    | WARM™ HOT-START TAQ DNA        | 500 U   |
| TBK0037    | POLYMERASE KIT                 | 1000 U  |
| TBK0042    | WARM™ HOT-START PCR MASTER MIX | 200 rxn |
| TBK0043    |                                | 400 rxn |

## LARGE FRAGMENTS

### TOO™ Long DNA Polymerase Kit

TOO™ LONG DNA Polymerase Kit is a convenient kit that includes TOO™ LONG DNA polymerase and highly pure High-Q™ dNTPs to enable the amplification of targets since 5 kb to 20 kb. TOO™ LONG DNA polymerase is a blended enzyme preparation which combines a polymerase with 3'-5' exonuclease activity with a polymerase lacking 3'-5' exonuclease activity. PCR amplification generates a mixture of A-overhang-ended (predominantly) and blunt-ended PCR products.

#### Features

- **Efficient long targets amplifications** (5-20 kb).
- PCR fragments **suitable to be cloning in TA-vectors or blunt vectors.**
- **Increased yield and fidelity** of PCR products.
- Error Rate  $5.6 \times 10^{-6}$  errors/bp per cycle.

#### Applications

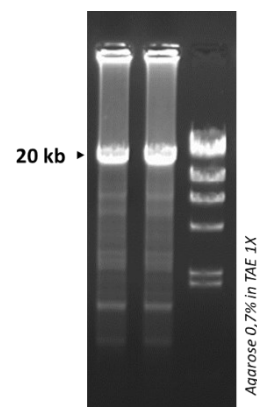
- Suitable as a direct replacement for ordinary STOUT™ Recombinant Taq DNA Polymerase in most applications.
- Generation of PCR fragments for TA or blunt cloning.
- Sequencing.
- DNA Labeling.
- Amplifications of long target sequences.

### TOO™ Long DNA Polymerase Master Mix

TOO™ LONG DNA Polymerase Master Mix (2x) is an optimized formulation to enable the amplification of targets since 5 kb to 20 kb. It is based in a blended enzyme preparation which combine a polymerase with 3'-5' exonuclease activity with a polymerase lacking 3'-5' exonuclease activity. PCR amplification generates a mixture of A-overhang-ended (predominantly) and blunt-ended PCR products.

#### Features

- **Ready to use** formulation, avoiding mistakes in PCR reaction preparation.
- All characteristics of TOO™ Long DNA Polymerase.



| REFERENCES | DESCRIPTION                         | FORMAT  |
|------------|-------------------------------------|---------|
| TBK0046    | TOO™ LONG DNA POLYMERASE KIT        | 500 U   |
| TBK0047    |                                     | 1000 U  |
| TBK0049    | TOO™ LONG DNA POLYMERASE MASTER MIX | 100 rxn |
| TBK0050    |                                     | 200 rxn |

## HIGH FIDELITY AMPLIFICATIONS

### TIARIS™ Pfu DNA Polymerase Kit

TIARIS™ Pfu DNA Polymerase Kit is an ideal kit when high fidelity is an important requirement in your PCR. The kit includes the proofreading enzyme TIARIS™ Pfu DNA polymerase and the highly purity High-Q™ dNTPs. TIARIS™ Pfu DNA polymerase (90 kDa) is a recombinant high fidelity polymerase from *Pyrococcus furiosus* produced in *Escherichia coli*. The enzyme has a strong 5' to 3' polymerase activity and 3' to 5' exonuclease activity which corrects nucleotide incorporation errors, thereby increasing fidelity and accuracy.

#### Features

- **High accuracy and fidelity** PCR with an error rate of  $1.3 \times 10^{-6}$  errors/bp per cycle.
- Elongation velocity is 0.2~0.4 kb/ min (70~75°C).
- **Suitable for blunt cloning purposes**, the enzyme produces blunt-end PCR fragments.
- **Highly thermostable enzyme**, which retains 94-99% of its activity after 1 hour at 95°C.
- PCR amplification > 2 kb require optimization.

#### Applications

- Broad range of techniques that require high fidelity PCR products such as: cloning, expression of gene of interest, mutagenesis.
- Generation of PCR fragments for blunt cloning.
- Filling 5' protruding ends.

### TIARIS™ Fast High-Fidelity DNA Polymerase Kit

TIARIS™ Fast High-Fidelity DNA polymerase is a robust enzyme with 3' → 5' exonuclease (proofreading) activity and enhanced DNA binding, resulting in improved processivity, yield, and extremely low error-rate included in TIARIS™ Fast High-Fidelity DNA Polymerase Kit. The enzyme has an error-rate of approximately 1 error per  $4.4 \times 10^7$  nucleotides incorporated, which is 50x lower than Taq DNA polymerase.

#### Features

- **High fidelity** (50x Taq DNA polymerase).
- **Fast PCR** due to short extension rate: 2kb/min.
- **Suitable for blunt cloning purposes**, the enzyme produces blunt-end PCR fragments.
- **Robust performance**, minimal optimization needed.
- dNTPs included.

#### Applications

High-fidelity PCR, site-directed mutagenesis, crude sample PCR, blunt-end cloning, among others, where robustness and proofreading are important.

| REFERENCES | DESCRIPTION                                   | FORMAT |
|------------|---|--------|
| TBK0086    | TIARIS™ PFU DNA POLYMERASE KIT                | 100 U  |
| TBK0087    |   | 500 U  |
| TBK1034    | TIARIS™ FAST HIGH-FIDELITY DNA POLYMERASE KIT | 250 U  |



#### Complementary Products

- ✓ pSHARP™-BLUNT Vector Cloning Kit (TBK0800, TBK0801)
- ✓ HIGH-Q™ Spin-Column DNA Cleanup Purification Kit (TBK0196, TBK0197)

## ISOTHERMAL PCR

### TIARIS™ LAMP BstI DNA Polymerase

TIARIS™ LAMP BstI DNA polymerase Kit is a convenient kit to amplify. It includes a mesophilic polymerase from *Geobacillus stearothermophilus*. Large fragment of BstI polymerase is produced in a recombinant way in *Escherichia coli*. The enzyme allows a rapid and efficient amplification by its strong displacement activity. The kit is useful to amplify minimally purified samples.

#### Features

- **Strand displacement.**
- **Without exonuclease activity.**
- Optimal activity at 60-65°C.
- Inactivated at 80°C.
- **Highly sensitivity**, amplification factor >10<sup>9</sup>.
- **Flexible readout.**

#### Applications

- Suitable to amplified minimally processed samples.
- Nucleic acid amplification by LAMP or RT-LAMP.
- DNA sequencing.
- Whole genome amplification.
- Point of care or *in situ* detection systems.

| REFERENCES | DESCRIPTION                         | FORMAT |
|------------|-------------------------------------|--------|
| TBK0083    | TIARIS™ LAMP BST DNA POLYMERASE KIT | 1600 U |
| TBK0084    | TIARIS™ LAMP BST DNA POLYMERASE KIT | 3200 U |

## SINGLE NUCLEOTIDE POLYMORPHISM (SNP) ANALYSIS

### TIARIS™ SNP DNA Polymerase



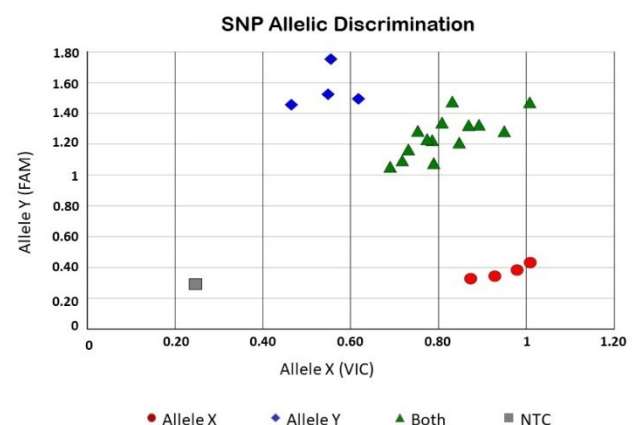
TIARIS™ SNP DNA Polymerase is designed to single nucleotide polymorphisms discrimination. The enzyme is an aptamer Hot-Start polymerase, with a high discrimination rate of 3' mismatch.

#### Features

- **Require activation** at >55°C.
- **100% accuracy in mismatch detection.**

#### Applications

- SNP genotyping.
- Suitable for hydrolysis probe-based assay, due to its 5'-3'-nuclease activity.



| REFERENCES | DESCRIPTION                    | FORMAT      |
|------------|--------------------------------|-------------|
| TBZ0357    | TIARIS™ SNP DNA POLYMERASE     | 250 U       |
| TBZ0358    | TIARIS™ SNP DNA POLYMERASE     | 1000 U      |
| TBK0061    | TIARIS™ SNP DNA POLYMERASE KIT | 1.25 mL     |
| TBK0062    | TIARIS™ SNP DNA POLYMERASE KIT | 2 x 1.25 mL |

## QUANTITATIVE PCR, qPCR

Q-PLUS™-Green or Probe Real Time qPCR Master Mix, without ROX are optimized Master Mix to be used in real time quantitative PCR. The Master Mix contains an antibody-based hot-start DNA polymerase, ultrapure dNTPs, MgCl<sub>2</sub>, PCR enhancers and a stabilization compound. Both kits include a separate vial of ROX that can be optionally added to the qPCR reaction Mix. The final concentration of ROX will vary depending on each real-time cycler manufacturer's specification.

### Features

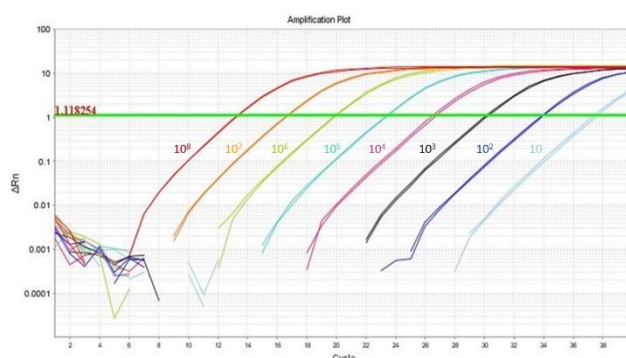
- **Ready to use.**
- Enhanced specificity and sensibility, **amplifies low copy number targets** with reduced non-specific.
- **Compatible** with fast and standard PCR program.

### Applications

- Real time quantitative PCR.
- Gene copy number determination
- Microbial detection.
- Genotyping.

### Q-PLUS™ Green Real Time qPCR Master Mix

Q-PLUS™-Green Real Time qPCR Master Mix, without ROX is an optimized formula 2x, dye-based Master Mix to be used in real time quantitative PCR. The detection involves the inclusion of SYBR Green.



### Q-PLUS™ Probe Real Time qPCR Master Mix

Q-PLUS™-Probe Real Time qPCR Master Mix, without ROX is an optimized Master Mix 2x to be used in real time quantitative PCR. The detection involves the prevention of fluorescence of a fluorophore by the close proximity with a quencher and the 5'–3' exonuclease activity of Taq polymerase to cleave the dual-labeled probe. The fluorescent signal intensity detected is proportional to the number of amplicons.

| REFERENCES | DESCRIPTION                             | FORMAT   |
|------------|---|----------|
| TBK0056    | Q-PLUS™ GREEN REAL TIME qPCR MASTER MIX | 200 rxn  |
| TBK0057    | Q-PLUS™ GREEN REAL TIME qPCR MASTER MIX | 400 rxn  |
| TBK0058    | Q-PLUS™ GREEN REAL TIME qPCR MASTER MIX | 500 rxn  |
| TBK0059    | Q-PLUS™ GREEN REAL TIME qPCR MASTER MIX | 1000 rxn |

| REFERENCES | DESCRIPTION                             | FORMAT   |
|------------|---|----------|
| TBK0071    | Q-PLUS™ PROBE REAL TIME qPCR MASTER MIX | 200 rxn  |
| TBK0072    | Q-PLUS™ PROBE REAL TIME qPCR MASTER MIX | 400 rxn  |
| TBK0073    | Q-PLUS™ PROBE REAL TIME qPCR MASTER MIX | 500 rxn  |
| TBK0074    | Q-PLUS™ PROBE REAL TIME qPCR MASTER MIX | 1000 rxn |

## DIRECT PCR

TIARIS™ Direct PCR kits allow direct PCR analysis of different samples, without the need of DNA purification and sample preparation. The kit combines a simple but efficient DNA extraction method with direct amplification using our Fast Hot-Start DNA Polymerase in a convenient and easy-to-use manner. DNA extraction is carried out in a single tube, without the need of multiple washing steps, therefore minimizing contamination risks.

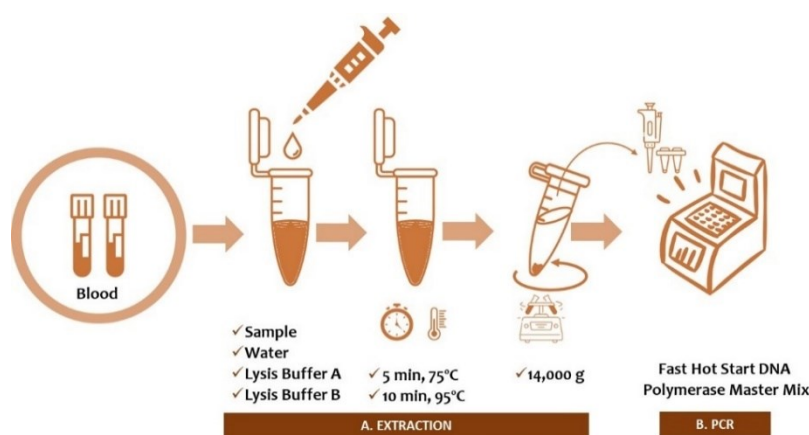
Recommended Amounts for Extraction Conditions included

|  |                              |                             |
|--|------------------------------|-----------------------------|
|  | <b>BLOOD</b>                 | 2-8 µL Fresh Blood in EDTA  |
|  | <b>FTA CARD</b>              | 2 mm <sup>2</sup>           |
|  | <b>BUCCAL SWAB</b>           | 1 unit                      |
|  | <b>HAIR FOLLICLES</b>        | 1-10 follicles              |
|  | <b>MOUSE TAIL</b>            | 5 mg (1-2 mm)               |
|  | <b>MOUSE EAR</b>             | 5 mg (2-4 mm <sup>2</sup> ) |
|  | <b>ANIMAL TISSUE</b>         | 3-30 mg                     |
|  | <b>PARAFFIN TISSUE BLOCK</b> | 1 mm <sup>3</sup>           |
|  | <b>PLANTS</b>                | 30 mg                       |

### Features

- **DNA is ready for PCR** in only 15 minutes.
- All Fast Hot-Start DNA Polymerase characteristics:
  - Amplicon size up to 5kb.
  - Extension Rate 4-8 kb per minute.
- **Compatible** with fast and standard PCR program.

## TIARIS™ Blood Direct PCR



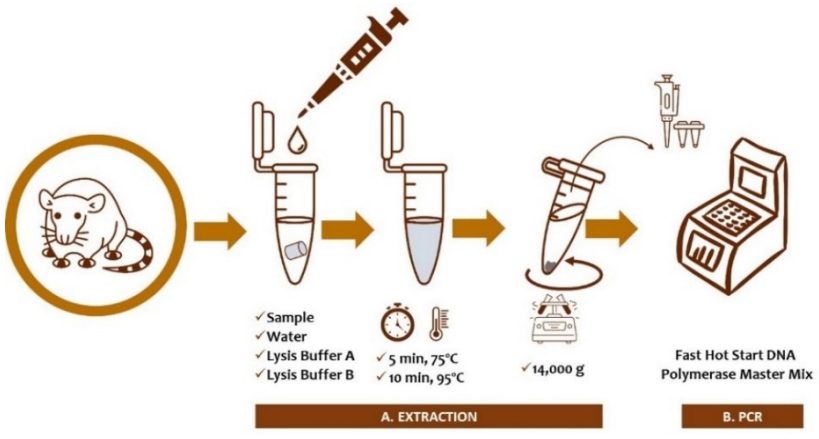
### Applications

- Direct PCR analysis of fresh blood, blood stored at 4°C and dried blood spot stored on DBS commercial cards.
- Genotyping analysis.

| REFERENCES | DESCRIPTION              | FORMAT  |
|------------|--------------------------|---------|
| TBK1018    | TIARIS™ BLOOD DIRECT PCR | 80 rxn  |
| TBK1019    | TIARIS™ BLOOD DIRECT PCR | 480 rxn |

## TIARIS™ Tissue Direct PCR

TIARIS™ Tissue Direct PCR kit is designed to be used with a variety of samples, including mouse ear and tail, FFPE tissue and human hair. DNA extraction is carried out in a single tube, without the need of multiple washing steps, therefore minimizing the risk of contamination. Fast Hot Start DNA Polymerase Master Mix contains premixed gel loading dye which allows direct sample loading on the gel.

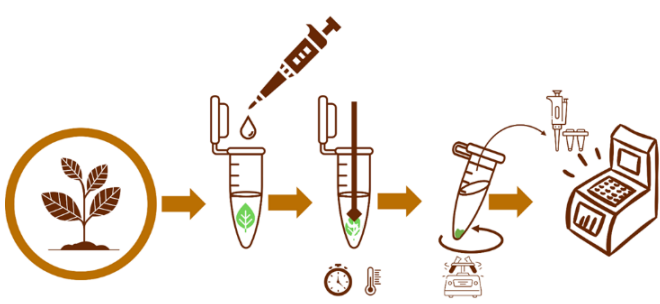


### Applications

- Direct PCR analysis of tissue, including mammalian tissue (*mouse ear and tail*), FFPE tissue and human hair.
- Mouse Genotyping.
- Genetic Screening.
- Multiplex PCR.

| REFERENCES | DESCRIPTION               | FORMAT  |
|------------|---------------------------|---------|
| TBK1015    | TIARIS™ TISSUE DIRECT PCR | 80 rxn  |
| TBK1016    | TIARIS™ TISSUE DIRECT PCR | 480 rxn |

## TIARIS™ Plant Direct PCR



### Applications

- Direct PCR analysis of vegetal tissue (*leaves*).
- Genetic Screening.

## TIARIS™ Body Fluid Direct PCR

| REFERENCES | DESCRIPTION                   | FORMAT |
|------------|-------------------------------|--------|
| TBK1021    | TIARIS™ PLANT DIRECT PCR      | 80 rxn |
| TBK1023    | TIARIS™ BODY FLUID DIRECT PCR | 80 rxn |



### Complementary Products

- ✓ TIARIS™ Tissue Protect Buffer (TBB0430, TBB0431, TBB0432)
- ✓ HIGH-Q™ Agarose LE (TBR0120, TBR0121, TBR0122)
- ✓ Tiaristain Green Safe 20x (TBR0226)

## SPECIFIC PCR DETECTION KITS

### Q-PLUS™ *Salmonella* Detection Kit

Q-PLUS™ *Salmonella* Detection Kit is an excellent tool for a rapid and highly sensitive detection of *Salmonella* spp. It allows molecular detection of pathogenic *Salmonella* spp in samples previously enriched, reducing the time of well-established microbiological diagnostic process. Q-PLUS™ *Salmonella* Detection Kit is based on Taqman® probes signaling after the amplification of a specific *Salmonella* target (FAM probe). The kit also includes an Internal Positive Control (ROX probe) for monitoring PCR inhibition and false negative results. Negative Control is used to check the absence of contamination.

#### Features

- **Optimal performance** on water and a wide range of food matrices.
- **Highest sensitivity:** high priming efficiency and 1-10 cells per 25 g food sample ( $10^{-10^2}$  fg gDNA) can be detected with 100% specificity.
- **100% inclusivity and 100% exclusivity** in tested strains.
- **Compatible** with all real time thermocyclers.

#### Applications

Fast and reliable detection of *Salmonella* spp in food and environmental samples after a pre-enrichment step according to DIN EN ISO 20837 and 20838.

| REFERENCES | DESCRIPTION                      | FORMAT  |
|------------|----------------------------------|---------|
| TBK1045    | Q-PLUS™ SALMONELLA DETECTION KIT | 100 rxn |

### Q-PLUS™ *Legionella* spp. Detection Kit

Q-PLUS™ *Legionella* spp. Detection Kit is an excellent and validated tool for a rapid detection of *Legionella* spp. It allows molecular detection of pathogenic *Legionella* spp in samples previously concentrated. Q-PLUS™ *Legionella* spp. Detection Kit is based on Taqman® probes signaling after the amplification of a specific *Legionella* target (FAM probe). The kit also includes an Internal Positive Control (ROX probe) for monitoring PCR inhibition and false negative results. Negative Control is used to check the absence of contamination.

#### Features

- **Highest sensitivity:** detection limit is ~ 5 pg of *Legionella* DNA allowing the detection of as little  $10^3$  cells/L of water, with a specificity of 100%.
- **100% inclusivity and 100% exclusivity** in tested strains.
- **Compatible** with all real time thermocyclers.

#### Applications

Fast and reliable detection of *Legionella* spp in water according to to ISO 22118: 2011.

| REFERENCES | DESCRIPTION                          | FORMAT  |
|------------|--------------------------------------|---------|
| TBK1049    | Q-PLUS™ LEGIONELLA SPP DETECTION KIT | 100 rxn |

## Q-PLUS™ *Legionella pneumophila* Detection Kit

Q-PLUS™ *Legionella pneumophila* Detection Kit is an excellent and validated tool for a rapid and highly sensitive detection of *Legionella pneumophila*. Q-PLUS™- *Legionella pneumophila* Detection Kit is based on Taqman® probes signaling after the amplification of a specific *Legionella* target (FAM probe). The kit also includes an Internal Positive Control (ROX probe) for monitoring PCR inhibition and false negative results. Negative Control is used to check the absence of contamination.

### Features

- **Highest sensitivity:** detection limit is ~ 5 pg of *Legionella pneumophila* DNA allowing the detection of as little 10<sup>3</sup> cells/L of water, with a specificity of 100%.
- **100% inclusivity and 100% exclusivity** in tested strains.
- **Compatible** with all real time thermocyclers.

### Applications

Fast and reliable detection of *Legionella pneumophila* in water according to ISO 22118: 2011.

| REFERENCES | DESCRIPTION                                  | FORMAT  |
|------------|--|---------|
| TBK1051    | Q-PLUS™ LEGIONELLA PNEUMOPHILA DETECTION KIT | 100 rxn |

## TIARIS PHYTODETECT®

### MOLECULAR DETECTION OF VEGETAL PATHOGENS

[www.phytodetect.tiarisbiosciences.com](http://www.phytodetect.tiarisbiosciences.com)



| REFERENCE    | PATHOGEN  | END PCR | REAL TIME |
|--------------|---|---------|-----------|
| <b>VIRUS</b> |   |         |           |
| TBK1090      | Apple Chlorotic Leaf Spot Virus (ACLSV)         | ●       |           |
| TBK1092      | Apple Mosaic Virus (ApMV)                       | ●       |           |
| TBK1094      | Barley Mild Mosaic Virus (BaMMV)                | ●       |           |
| TBK1096      | Cherry Leafroll Virus (CLRV)                    | ●       |           |
| TBK1098      | Citrus Tristeza Virus (CTV)                     | ●       |           |
| TBK1084      | Cucumber Green Mottle Mosaic Virus (CGMMV)      | ●       |           |
| TBK1085      | Cucumber Green Mottle Mosaic Virus (CGMMV)      |         | ●         |
| TBK1081      | Cucumber Vein Yellowing Virus (CVYV)            | ●       |           |
| TBK1102      | Cucurbit Aphid-Borne Yellows Virus (CABYV)      | ●       |           |
| TBK1104      | Cucurbit Chlorotic Yellow Virus (CCYV)          | ●       |           |
| TBK1106      | Cucurbit Yellow Stunting Disorder Virus (CYSDV) | ●       |           |
| TBK1108      | Impatiens Necrotic Spot Virus (INSV)            | ●       |           |
| TBK1075      | Papaya Ringspot Virus (PRSV)                    | ●       |           |
| TBK1080      | Pepino Mosaic Virus (PepMV)                     |         | ●         |
| TBK1100      | Plum Pox Virus (PPV)                            | ●       |           |
| TBK1110      | Potato Leafroll Virus (PLRV)                    | ●       |           |
| TBK1112      | Potato Virus Y (PVY)                            | ●       |           |
| TBK1114      | Prunus Necrotic Ringspot Virus (PNRSV)          | ●       |           |
| TBK1086      | Tomato Blotch Fruit Virus (ToBFV)               | ●       |           |
| TBK1087      | Tomato Blotch Fruit Virus (ToBFV)               |         | ●         |
| TBK1070      | Tomato Brown Rugose Fruit Virus (ToBRFV)        |         | ●         |
| TBK1073      | Tomato Chlorosis Virus (ToCV)                   |         | ●         |
| TBK1074      | Tomato Chlorosis Virus (ToCV)                   | ●       |           |
| TBK1088      | Tomato Infectious Chlorosis Virus (TICV)        |         | ●         |
| TBK1079      | Tomato Leaf Curl New Delhi Virus (ToLCNDV)      |         | ●         |
| TBK1077      | Tomato Mosaic Virus (ToMV)                      | ●       |           |
| TBK1072      | Tomato Mottle Mosaic Virus (ToMMV)              | ●       |           |
| TBK1076      | Tomato Spotted Wilt Virus (TSWV)                |         | ●         |
| TBK1078      | Tomato Yellow Leaf Curl Virus (TYLCV)           | ●       |           |

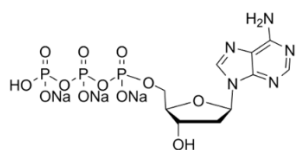


| REFERENCE       | PATHOGEN   | END PCR | REAL TIME |
|-----------------|--|---------|-----------|
| <b>BACTERIA</b> |  |         |           |
| TBK1116         | <i>Acidovorax avenae</i> subsp. <i>citrulli</i>              | ●       |           |
| TBK1118         | <i>Clavibacter michiganensis</i> subsp. <i>insidiosus</i>    | ●       |           |
| TBK1120         | <i>Clavibacter michiganensis</i> subsp. <i>michiganensis</i> | ●       |           |
| TBK1122         | <i>Clavibacter michiganensis</i> subsp. <i>sepedonicus</i>   | ●       |           |
| TBK1124         | <i>Erwinia amylovora</i>                                     | ●       |           |
| TBK1125         | <i>Erwinia amylovora</i>                                     |         | ●         |
| TBK1126         | <i>Ralstonia solanacearum</i>                                | ●       |           |
| TBK1128         | <i>Xanthomonas arboricola</i> pv. <i>pruni</i>               | ●       |           |
| TBK1130         | <i>Xanthomonas citri</i> subsp. <i>citri</i>                 | ●       |           |
| TBK1132         | <i>Xanthomonas fragariae</i>                                 | ●       |           |
| TBK1134         | <i>Xanthomonas hortorum</i> pv. <i>pelargonii</i>            | ●       |           |
| TBK1136         | <i>Xanthomonas oryzae</i>                                    | ●       |           |
| TBK1138         | <i>Xylophilus ampelinus</i>                                  | ●       |           |
| TBK1140         | <i>Xylella fastidiosa</i>                                    | ●       |           |
| <b>FUNGI</b>    |  |         |           |
| TBK1150         | <i>Colletotrichum</i> spp.                                   | ●       |           |
| TBK1152         | <i>Fusarium culmorum</i>                                     | ●       |           |
| TBK1154         | <i>Fusarium graminearum</i>                                  | ●       |           |
| TBK1156         | <i>Fusarium oxysporum</i>                                    | ●       |           |
| TBK1158         | <i>Fusarium solani</i>                                       | ●       |           |
| TBK1160         | <i>Phytophthora fragariae</i>                                | ●       |           |
| TBK1162         | <i>Sclerotinia sclerotiorum</i>                              | ●       |           |
| TBK1164         | <i>Verticillium albo-atrum</i>                               |         | ●         |
| TBK1166         | <i>Verticillium dahliae</i>                                  |         | ●         |



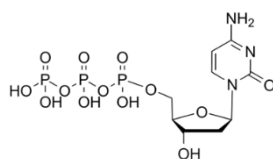
## RELATED REAGENTS

### Nucleotides



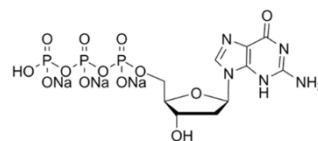
**dATP**

MW 491.18 g/mol (free acid).  
 $\lambda_{max}$  259 nm.  
 $\epsilon = 15.1 \text{ L mmol}^{-1}\text{cm}^{-1}$ .



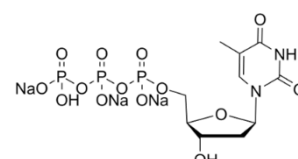
**dCTP**

MW 467.15 g/mol (free acid).  
 $\lambda_{max}$  271 nm.  
 $\epsilon = 8.9 \text{ L mmol}^{-1}\text{cm}^{-1}$ .



**dGTP**

MW 507.18 g/mol (free acid).  
 $\lambda_{max}$  252 nm.  
 $\epsilon = 14.2 \text{ L mmol}^{-1}\text{cm}^{-1}$ .



**dTTP**

MW: 482.17 g/mol (free acid).  
 $\lambda_{max}$  267 nm.  
 $\epsilon = 9.5 \text{ L mmol}^{-1}\text{cm}^{-1}$ .

### Features

- Highest purity, > 99%.
- Aqueous solution at pH 8.5.

### Applications

- Standard and quantitative PCR.
- RT-PCR and RT-qPCR.
- Consistent amplifications with more demanding enzymes such as high fidelity enzymes and long polymerases.

| REFERENCES | DESCRIPTION                                   | FORMAT                |
|------------|---|-----------------------|
| TBR0200    | HIGH-Q™ dATP SOLUTION, 100 mM                 | 400 $\mu\text{L}$     |
| TBR0201    |   | 200 $\mu\text{L}$     |
| TBR0202    | HIGH-Q™ dCTP SOLUTION, 100 mM                 | 400 $\mu\text{L}$     |
| TBR0203    |   | 200 $\mu\text{L}$     |
| TBR0204    | HIGH-Q™ dCTP SOLUTION, 100 mM                 | 400 $\mu\text{L}$     |
| TBR0205    |   | 200 $\mu\text{L}$     |
| TBR0206    | HIGH-Q™ dTTP SOLUTION, 100 mM                 | 400 $\mu\text{L}$     |
| TBR0207    |   | 200 $\mu\text{L}$     |
| TBR0198    | HIGH-Q™ dNTP MIX, 8 mM TOTAL,<br>2 mM EACH    | 5 x 1 mL              |
| TBR0199    |   | 1 mL                  |
| TBR0208    | HIGH-Q™ dNTP MIX, 10 mM TOTAL,<br>2.5 mM EACH | 5 x 1 mL              |
| TBR0209    |   | 1 mL                  |
| TBR0211    | HIGH-Q™ dNTP MIX, 100 mM TOTAL, 25<br>mM EACH | 1 mL                  |
| TBR0212    | HIGH-Q™ dNTP SOLUTION SET,<br>100 mM EACH     | 4 x 200 $\mu\text{L}$ |
| TBR0213    |   | 4 x 400 $\mu\text{L}$ |

### Other Reagents

| REFERENCES | DESCRIPTION                    | FORMAT      |
|------------|--------------------------------|-------------|
| TBR0105    | BETAINE ENHANCER SOLUTION 5M   | 1.5 mL      |
| TBR0106    |                                | 5 x 1.5 mL  |
| TBR0215    | MgCl <sub>2</sub> 25 mM        | 10 x 1.5 mL |
| TBR0216    |                                | 100 mL      |
| TBR0217    | MgCl <sub>2</sub> 50 mM        | 10 x 1.5 mL |
| TBR0218    | MgCl <sub>2</sub> 1 M          | 100 mL      |
| TBB0310    | STOUT™ PCR BUFFER 10x          | 10 x 1.5 mL |
| TBB0311    | WARM™ HOT-START PCR BUFFER 10x | 10 x 1.5 mL |
| TBB0312    | TOO™ LONG PCR BUFFER 10x       | 10 x 1.5 mL |
| TBB0303    | PCR GRADE WATER, NUCLEASE FREE | 10 x 1.5 mL |
| TBR0259    |                                | 10 x 1.5 mL |
| TBR0260    | DMSO, MOLECULAR BIOLOGY GRADE  | 50 mL       |
| TBR0261    |                                | 100 mL      |

