SOLIS BIODYNE

INNOVATION POWERED **BY NATURE**

**SOLIS BIODYNE OÜ**
**A:** Teaduspargi 9, 50411 Tartu, Estonia
**E:** info@solisbiodyne.com
**T:** +372 7409 960
**F:** +372 7402 079

# High-throughput genotyping

PCR and qPCR reagents **solisbiodyne.com**

Ideal for High-Throughput and Automation

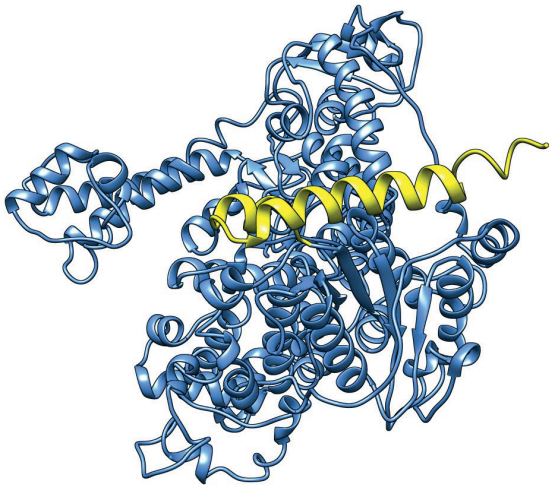
Increased tolerance to inhibitors

No cold chain required

Remarkable stability

## All enzymes produced at Solis BioDyne are exceptionally stable at room temperature* due to a specific genetic modification - Stability TAG.

3D MODEL OF FIREPOL® DNA POLYMERASE INCLUDING STABILITY TAG



Taq DNA Polymerase  Stability TAG

All enzymes produced at Solis BioDyne, including DNA polymerases and reverse transcriptases, as well as other proteins (i.e. RNase inhibitor, uracil-N-glycosylase), are exceptionally stable at room temperature due to a proprietary genetic modification in the polypeptide structure - **Stability TAG**.

All our catalogue products can withstand 1 month at room temperature without detectable change in the performance of the product, which enables shipping our products without ice. The exceptional product stability is furthermore supported by our unique buffer composition. Stability TAG enhances also long-term stability of our enzymes stored at -20°C which is the recommended storage temperature of all our products upon arrival, to ensure maximum shelf-life.

* Room temperature is 15-25°C according to "guidelines for the Storage of Essential Medicines and Other Health Commodities", World Health Organization (2003)

**EU Patent** EP2501716 | **India Patent** no 343501 | **Korea Patent** No 10-1773636 | **US Patent** No 9,321,999

# SolisFAST® range - ideal for high-throughput workflows

## Features

- **Fast** – delivers results 2-4x faster
- **Accurate** – reproducible quantification of up to 5- plex assays with probe-based mixes
- **Sensitive** – consistent results with low- and high-copy targets
- **Trustworthy** – increased room temperature stability up to 6 months adds security and flexibility

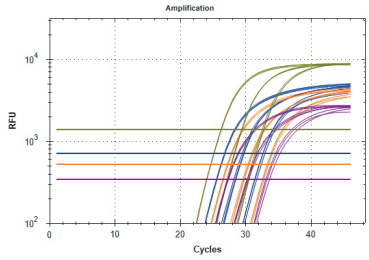
**SolisFAST® qPCR range** offers ready-to-use probe- and dye-based qPCR mixes for **fast, highly sensitive and reproducible** qPCR assays. Combining our *in silico* designed **inhibitor tolerant SolisFAST® DNA Polymerase** and an optimized buffer, the SolisFAST® qPCR Mixes enable **robust qPCR performance** and accurate target detection in demanding conditions. The product line offers **ice-free shipping** and reaction set-up.

**Exceptional stability** of the SolisFAST® qPCR range enables shipping at ambient temperature

**Table 1.** Stability features of the entire SolisFAST® qPCR range

| Temperature | SolisFAST® Probe qPCR Mix | SolisFAST® Probe qPCR Mix with UNG | SolisFAST® SolisGreen® qPCR Mix |
|---|---|---|---|
| +37°C | 2 weeks | 2 weeks | 2 weeks |
| +25°C | 6 months | 3 months | 3 months |
| +4°C | 1 year | 1 year | 1 year |
| -20°C | 2 years | 2 years | 2 years |

**A)** Test Sample of SolisFAST® Probe qPCR Mix: stored for **6 months at +25°C**




**B)** Reference Sample: **stored at -20°C**

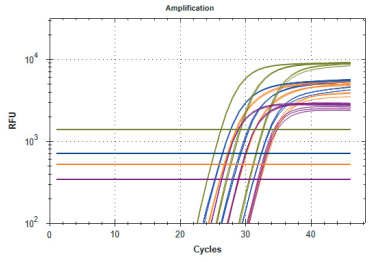
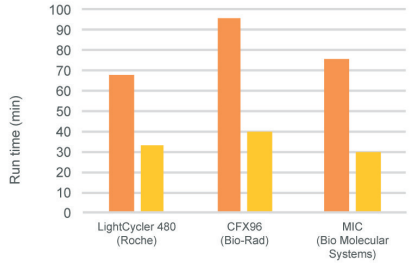



**Figure 1.** A Test Sample of the SolisFAST® Probe qPCR Mix (no ROX) was incubated at +25°C for 6 months. A Reference sample of this product was stored at -20°C only. 4-plex qPCR reactions (FAM, blue; VIC, green; JUN, orange; Cy5, purple) using both the Test sample (A, upper graph) and the Reference sample (B, lower graph) were performed on the Bio-Rad CFX96 platform, using three 10-fold serial dilutions of human gDNA (from 2 ng/µl to 0.02 ng/µl). No significant changes in Cq values and fluorescence levels were detected.

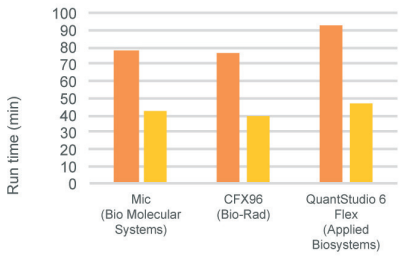
# 2x less time from sample to results!

Comparison of run times on different cyclers with dye-based (Figure 2) and probe-based (Figure 3) products from the SolisFAST® qPCR range.




Standard qPCR reaction
Fast / Ultra Fast qPCR reaction

**Figure 2.** Example of thermal cycling protocol time-saving. Duration of a qPCR run with standard thermal conditions using regular qPCR mix and fast thermal conditions using SolisFAST® SolisGreen® qPCR Mix.




Standard qPCR reaction
Fast qPCR reaction

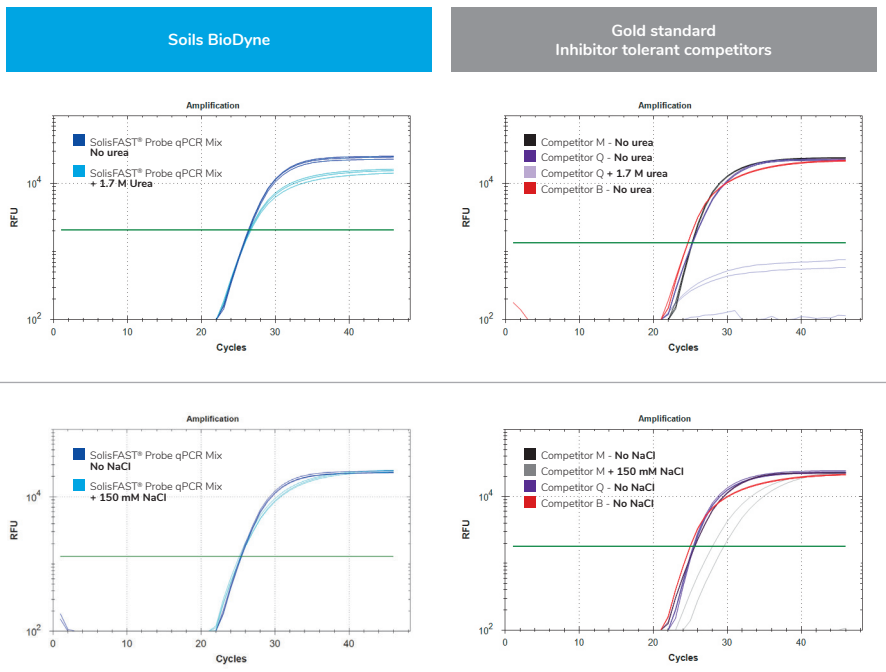
**Figure 3.** Example of thermal cycling time-saving. Duration of a 40-cycle qPCR run with standard thermal conditions using regular qPCR mix (initial activation 10-12 min; denaturation 15 sec, annealing/ extension 40-60 sec) and fast thermal conditions using SolisFAST® Probe qPCR Mix (initial activation 2-3 min; denaturation 2-5 sec, annealing extension 10-20 sec). Amplifications were performed on human gDNA.

# SolisFAST® products have been tested to tolerate common **PCR inhibitors**, allowing **robust performance** from complex samples where PCR inhibition is an issue.

| | | Solis BioDyne | | Gold standard Inhibitor tolerant competitors | | |
|---|---|---|---|---|---|---|
| **Source** | **Inhibitor** | **SolisFAST® Probe qPCR Mix (no ROX)** | **SolisFAST® Probe qPCR Mix (no ROX) With UNG** | **Competitor Q** | **Competitor M** | **Competitor B** |
| Urine | Urea | **1.7 M** | **1.7 M** | 1.2 M | **1.4 M** | < 1.2 M |
| Plants | Pectin | **1.6 mg/ml** | **1 mg/ml** | **1 mg/ml** | 0.7 mg/ml | **1 mg/ml** |
| Sample prep. | DMSO | **11 %** | **8 %** | **8 %** | **11 %** | **8 %** |
| Sample prep. | NaCl | **150 mM** | **130 mM** | 110 mM | **140 mM** | < 90 mM |
| Sample prep. | PBS (1x, pH 7.2. 7.4) | **30 %** | **30 %** | **30 %** | **20 %** | **20 %** |
| Sample prep. | EtOH | **6 %** | **5 %** | 4 % | **6 %** | **6 %** |
| Soil | Humic acid | **1.4 ng/µl** | **1.4 ng/µl** | **1.4 ng/µl** | **1.4 ng/µl** | **1.4 ng/µl** |
| Blood | Hematin | **3.9 µM** | **3.9 µM** | **4.1 µM** | **4.1 µM** | **3.9 µM** |
| Total reaction time on Bio-Rad CFX96 | | **47 min** | | **1 h 7 min** | | |

**Table 2.** To assess the inhibitor tolerance of the SolisFAST® probe-based qPCR mixes, a qPCR test system, targeting a 72 bp region of human gDNA, was developed and the impact of common PCR inhibitors to the reaction was evaluated. Three gold standard inhibitor tolerant competitor products were also assessed in the same panel. Tolerance limits, meaning the inhibitor concentrations at which the Ct value does not increase by more than 1, are displayed in the table. Fast extension rates of the SolisFAST® DNA polymerase enable shorter run times while still showing strong inhibitor tolerance compared to gold standard inhibitor tolerant competitor products.

# **Reliable results** and top performance even **in inhibited reaction conditions**




**+ 1.7 M Urea**
Amplification signals generated by competitors M, Q and B in the presence of 1.7 M urea remain below the threshold level.

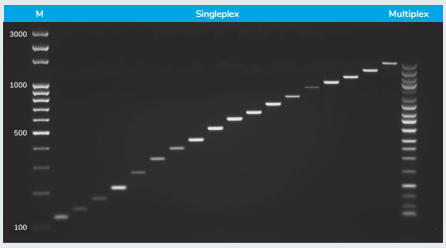
**+150 mM NaCl**
Amplification signals generated by competitors Q and B in the presence of 150 mM NaCl remain below the threshold level.

**Figure 4.** Representative amplification plots from inhibitor tolerance studies are presented. The graphs showcase that in the presence of either 1.7 M urea or 150 mM NaCl, only a slight decrease in fluorescence and <1 Cq shift is detected with SolisFAST® Probe qPCR Mix, whereas competitor products show no amplification in the presence of 1.7 M urea and only competitor M was able to generate detectable amplification curves in the presence of 150 mM NaCl.

## Endpoint PCR

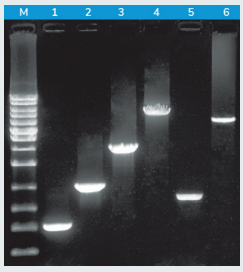
**SolisFAST® Master Mix**

- Reliable results in **single-** and **multiplex** assays
- High **specificity** and **yield**
- PCR results in less than **30 minutes**
- **dUTP/UNG** containing Mix available




**HOT FIREPol® Blend Master Mix Ready to Load**

- **Increased** yield
- Sensitivity and specificity up to **5x higher fidelity**
- Suitable for templates **up to 5 kb**
- **Reduced primer dimer** formation
- Load **directly on the gel** after PCR
- Compatible with Illumina **sequencing**
- Customers report **52x multiplexing ability**



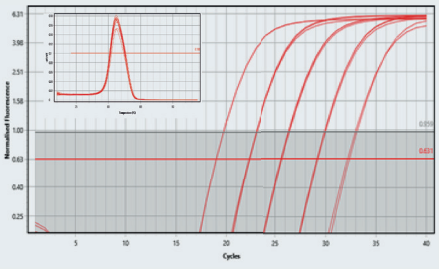

**HOT TERMIPol® DNA Polymerase**

- **Hot-start** DNA Polymerase
- Efficiently **incorporates** unconventional **nucleotides**
- Applications:
  - SNP detection
  - Primer extension assay
  - Mass array
  - Sanger sequencing
  - MALDI-TOF
  - Microarray
  - DNA labeling

## Fast dye-based qPCR

**SolisFAST® SolisGreen® qPCR Mix**

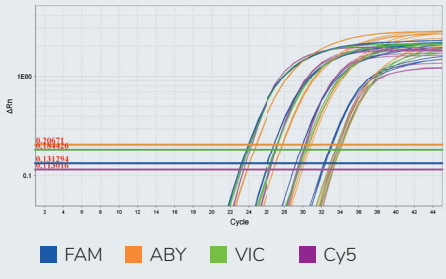
- **Accurate** dye-based quantification
- Excellent performance with **low-concentrated** samples
- Optional **ROX** passive reference dye
- **2x faster protocols** compared to standard dye-based qPCR




## Fast probe-based qPCR

**SolisFAST® Probe qPCR Mix**

- **Accurate** probe-based quantification in **up to 5-plex** assays
- Excellent performance with **low-concentrated** samples
- Optional **ROX** and **Purple** passive reference dyes
- **2x faster protocols** compared to standard probe-based qPCR
- **dUTP/UNG** containing Mix available




FL-HT-V1

SOLIS BIODYNE

For further details and ordering please contact
**info@solisbiodyne.com**
or call **+372 740 9960**

**Request a FREE SAMPLE!**