



**SOLIS
BIODYNE**

INNOVATION POWERED BY NATURE

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SolisFAST® Lyo-ready qPCR Kit with UNG

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SolisFAST® Lyo-Ready qPCR Kit with UNG represents a glycerol-free qPCR solution with optimized excipients that is suitable for reliable **lyophilization**. The Kit is designed for fast and sensitive amplification and quantification of DNA targets using probe-based assays. The formulation is tailored for effective freeze-drying to produce **stabilized cakes or beads** that easily dissolve upon reconstitution with sample material. With a high collapse temperature (Tc) of -30.8 °C, the kit allows

for the adoption of a **rapid and energy-efficient lyophilization protocol**. With a glass transition temperature (Tg) of 68.3°C, the lyophilizates have a high resistance against long term exposure to higher temperatures. Lyophilizing together with primers and probes provides maximum convenience for further reaction set up. Inhibitor tolerance and fast extension rates of the SolisFAST® DNA Polymerase enable quick and robust DNA detection even from complex biological sample types.

The Kit comes in a flexible 2 tube format: a glycerol-free qPCR mix (5x) and a lyophilization excipient mix (4x).

SolisFAST® Lyo-Compatible qPCR Mix with UNG offers you:

- **Flexibility with lyophilization** – the qPCR mix formulation is glycerol free, making it suitable for freeze-drying. Either use it in combination with Solis BioDyne's proprietary SolisFAST® Lyo Excipient Mix (supplied with the kit) or opt for your own additives
- **Sensitive multiplex detection** – detect low copy numbers with up to 5-plexing
- **Short run times** - fast extension rates of the SolisFAST® DNA Polymerase enable you to save time by using quick cycling protocols
- **Peace of mind with UNG** – Salini UNG® Uracil-N-Glycosylase will eliminate carryover contamination and prevent false positive results

SolisFAST® Lyo Excipient Mix gives you:

- Efficient lyophilization into cakes and beads
- Strong cryoprotection during freeze-drying
- Stabilized lyophilizates with high resistance against long term exposure to higher temperatures
- Rapid and seamless reconstitution
- Preserved qPCR performance after lyophilization

Wide dynamic range

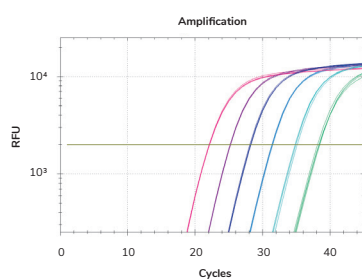


Figure 1. ALB target from human gDNA was amplified over six 10-fold dilutions (500 ng to 5 pg; E=104%), showing sensitive detection over a wide dynamic range. Reactions were run on Bio-Rad CFX96 platform.

Prevent false positive results with Salini UNG® Uracil-N-Glycosylase

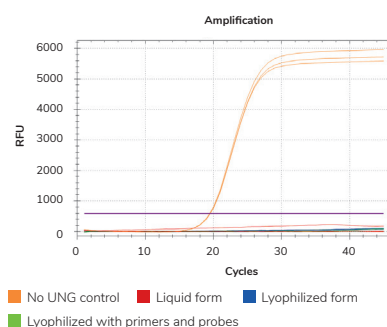


Figure 2. Amplification plot showcasing results obtained with SolisFAST® Lyo-Ready qPCR Kit with UNG in liquid form (red), lyophilized form (blue), lyophilized with primers and probes (green) and a formulation without UNG (orange). All reactions were spiked with an equal concentration of dU-containing amplicons, mimicking carryover contamination. UNG maintained full functionality in all conditions, degrading all the amplicons, while control reactions without UNG exhibited steady amplification.

Efficient 5-plex performance is preserved after lyophilization

SolisFAST® Lyo-Ready qPCR Kit with UNG shows **consistent performance** before and after lyophilization, as well as after lyophilization with primers and probes.

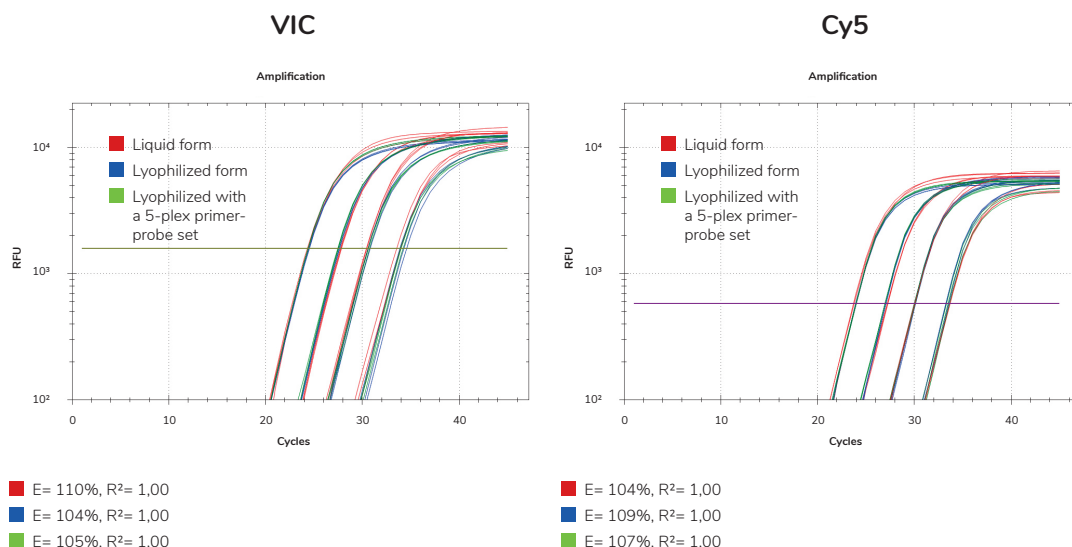


Figure 3. Five-plex RT-qPCR reactions were performed with the SolisFAST® Lyo-Ready qPCR Kit with UNG (amplification plots from VIC and Cy5 channel are presented). The Kit was tested before lyophilization in liquid form (red), after lyophilization to cakes (blue) and after lyophilization to cakes with primers and probes (green). All channels and conditions produced consistent results: Cq values of respective DNA dilutions stayed within ± 0,5 range, fluorescence levels did not fluctuate by more than 15% and efficiencies remained between 90-110%. The reactions were performed with human gDNA (50 ng to 50 pg) and run on Bio-Rad CFX96 platform using the following protocol: 3 min 95 °C, 45 cycles of 3 sec 95 °C, 10 sec 60 °C.

Application tip!

SolisFAST® Lyo-Ready qPCR Kit with UNG exhibits great tolerance to PCR inhibitors, allowing for sensitive DNA analysis with quicker and simpler crude sample extraction methods.

Table 1. Inhibitor testing of SolisFAST® Lyo-Ready qPCR Kit with UNG.

Source	Inhibitor	Concentration	Cq shift: SolisFAST® Lyo-Ready qPCR Kit with UNG	Cq shift: Competitor X
Urine	Urea	1,4 M	0,5	No amplification
Stool	Bile salts	1,4 mg/ml	0,9	No amplification
Blood	Hematin	3,4 µM	0,5	-0,03
Sample preparation	PBS (1x, pH 7,2)	40%	-0,4	-0,4
Sample preparation	Heparin	3 ng/µl	0,87	-0,35

SolisFAST® Lyo-Ready qPCR Kit with UNG underwent testing to assess its tolerance to prevalent PCR inhibitors in urine, stool and blood - a critical consideration in test development for these sample types. The Kit demonstrated robust amplification, resulting in a minimal Cq shift of less than 1 at the tested inhibitor concentrations. In contrast, an alternative lyo-ready product showed significantly impaired performance in the presence of urea and bile salts, leading to complete amplification inhibition. Furthermore, a widely used sample storage and pre-treatment buffer, PBS, exhibited no adverse effects on qPCR at a concentration of 40%.

Ordering information

Bulk formats available upon request

Product	CAT. NO.	Product size (20 µl rxn)
SolisFAST® Lyo-ready qPCR Kit with UNG	28-52-0000S (free sample)	100 rxn
	28-52-00250	250 rxn
	28-52-00250-5	5x250 rxn
	28-52-05000	5000 rxn



For more information, see the product's website

FL-28-52-V1



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

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