



**SOLIS  
BIODYNE**

INNOVATION POWERED BY NATURE

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# Isothermal amplification with SoliSD™ Bsm DNA Polymerase

Increased  
temperature tolerance  
with **Stability TAG**  
technology.

Excellent  
performance with  
unique **SoliSD™**  
**Supplement**  
**system.**



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# An extremely stable SoliSD™ Bsm DNA Polymerase in a flexible kit format

Faster than PCR

Reliable results

No cold chain

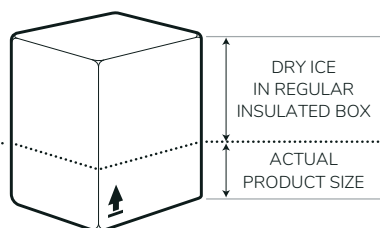
**SoliSD™ Bsm DNA Polymerase** sequence originates from the *Bacillus smithii* and includes a patented **Stability TAG** technology (Figure 1) [1]. This modification makes the enzyme exceptionally stable at elevated temperatures (Figure 2). Hence making transportation and shipment much cheaper and convenient with no need for a cold chain.\* High-temperature stability ensures immense product quality, significantly reduced environmental impact, and facilitates logistics and handling.

## Features

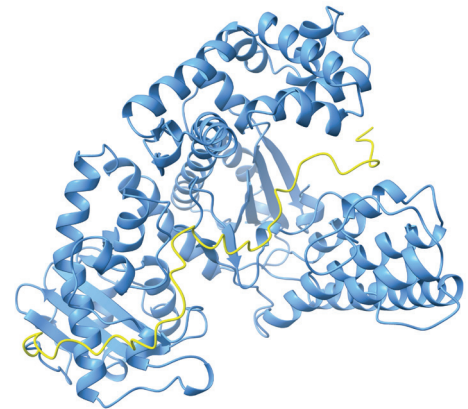
- Enzyme stable for at least 1 month at 37°C
- Fast results in 4-20 minutes
- The enzyme is active at a wide range of temperatures between 51-62°C
- Unique **SoliSD™ Supplement system** for excellent performance
- Available in **glycerol-free lyo-compatible** format

The main challenge with Loop-Mediated Isothermal Amplification (LAMP) is the complex assay design. Optimization can be a challenge, but once done, the analysis works perfectly. You have flexibility in your own assay design with the **SoliSD™ Bsm DNA Polymerase** kit. The kit is composed of 5 components, and you can use them together or separately, in combination with different dyes or other detection methods. We are happy to give you tips and help with assay development!

No need to pay for shipping the ice\*

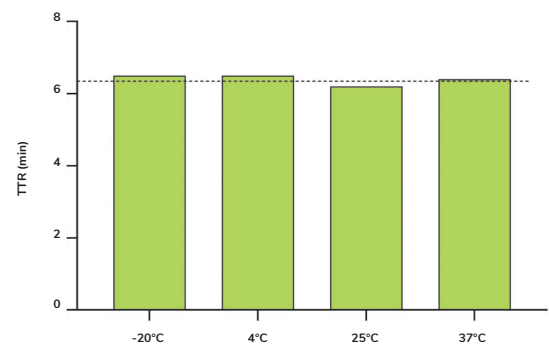


\* SoliSD™ Lyo-compatible RT-LAMP Kit (32-23-0000S) shipped on blue ice



■ Bsm DNA Polymerase ■ Stability TAG

**Figure 1.** 3D model of SoliSD™ Bsm DNA Polymerase protein structure with the implemented Stability TAG technology. The protein structure was predicted with AlphaFold 2 [2, 3].



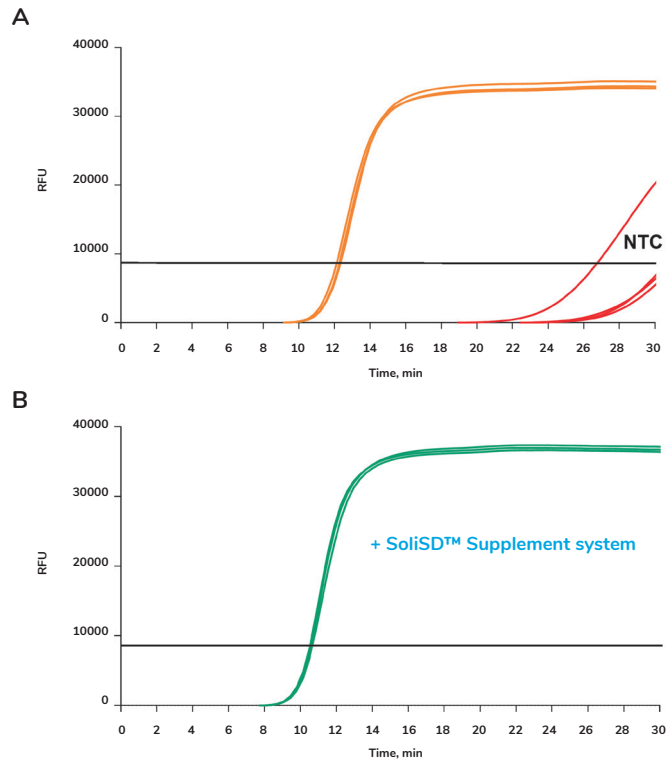
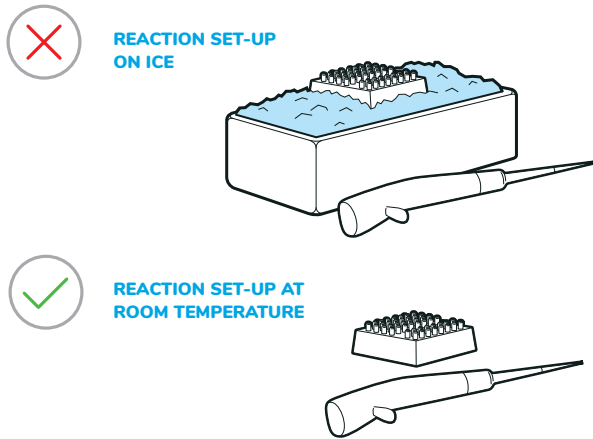
**Figure 2.** SoliSD™ Bsm DNA Polymerase is exceptionally stable. The aliquots were stored at -20°C, or 4°C, or 25°C, or 37°C for 1 month. LAMP reactions were performed at 60°C with the unique SoliSD™ Supplement system in the mix. 0.2 ng/μl of lambda DNA target was amplified. Reactions were run on Bio-Rad CFX96 platform. Reaction TTR (time to result) is shown in minutes.



For more information visit [solisbiodyne.com](https://www.solisbiodyne.com)

# Unique SoliSD™ Supplement system

- The common issue of isothermal amplification assay design is no template control (NTC) signal. We have developed a unique **SoliSD™ Supplement system** for temperature-dependent enzyme activation to resolve this problem (Figure 3).
- An outstanding bonus of **SoliSD™ Supplement system** is minimizing variability between replicates, providing more consistent results.
- **SoliSD™ Supplement system** enables reaction set-up at room temperature, with no need to deal with ice boxes, freeing up benchtop space, and resulting in fewer surfaces to clean and lower contamination risk.



**Figure 3.** Unique SoliSD™ Supplement system improves enzyme performance. LAMP reactions were performed at 60°C (a) without or (b) with SoliSD™ Supplement system in the mixture. 0.2 ng/μl of hPOP7 target from human genomic DNA was amplified. Reactions were run on Bio-Rad CFX96 platform.

Low replicate variability

No NTC signal

Reaction set-up at room temperature

## Isothermal amplification is cost-effective and POCT friendly

The enzyme is developed for Loop-Mediated Isothermal Amplification (LAMP), which is fast, sensitive, and compatible with POCT applications. The isothermal amplification reactions can be performed at lower temperatures (~50-65°C) compared to PCR. **SoliSD™ Bsm DNA Polymerase's** optimal reaction temperature is 60°C, which makes it perfect for POCT devices,

where every degree counts. In the case of applied testing or clinical applications isothermal amplification at lower reaction temperature benefits in no need for sophisticated equipment, reactions can be run in an ordinary thermostat or already existing PCR machines.

Too good to be true?

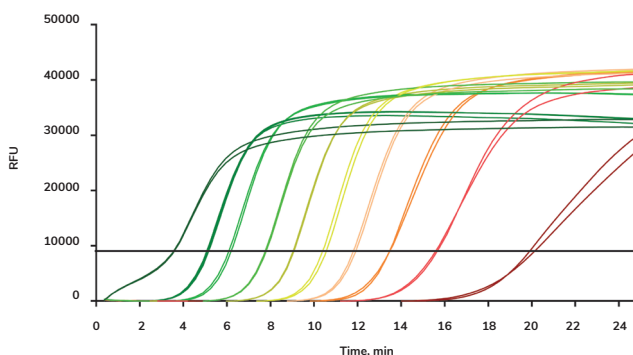
» Request for a FREE SAMPLE

# SoliSD™ Bsm DNA Polymerase is fast and sensitive

## Contamination prevention tips

- Separate working space into the pre-amplification set-up, amplification, and post-amplification analysis areas.
- Do not open reaction vessels following amplification, if applicable.
- Use dUTPs and UNG in the reaction mix to reduce risk of carryover contamination.

Two other great features of isothermal amplification is incredible speed and sensitivity. With **SoliSD™ Bsm DNA Polymerase** you can achieve reaction time to result from 3-4 minutes at a wide concentration range, between  $10^0$ - $10^9$  cp/μl (Figure 4).



**Figure 4.** SoliSD™ Bsm DNA Polymerase is fast and sensitive. LAMP reactions were performed at 60°C. Lambda DNA target was amplified over ten 10-fold dilutions (from right to left  $10^0$ - $10^9$  cp/μl). Reactions were run on Bio-Rad CFX96 platform.

[1] Kahre, O. et al., Compositions for increasing polypeptide stability and activity, and related methods, EP2501716B1 (2015) and US9321999B2 (2016). [2] Jumper, J. et al. Highly accurate protein structure prediction with AlphaFold. Nature (2021). [3] Varadi, M. et al. AlphaFold Protein Structure Database: massively expanding the structural coverage of protein-sequence space with high-accuracy models. Nucleic Acids Research (2021).

## Ordering information

Product	CAT. NO.	25 μl reactions	Kit components
SoliSD™ Bsm DNA polymerase kit	32-21-0000S 32-21-0250R	100 rxn 250rxn	SoliSD™ Bsm DNA polymerase (8 U/μl) 10x Isothermal Reaction Buffer 100 mM MgSO4 25x SoliSD™ Supplement 10x Solution S
SoliSD™ Lyo-compatible Bsm DNA Polymerase Kit	32-22-0000S 32-22-0250R 32-22-1000R	100 rxn 250 rxn 1000 rxn	SoliSD™ Glycerol-Free Bsm DNA Polymerase (40 U/μl) 25x SoliSD™ Supplement 10x Isothermal Reaction Buffer 100 mM MgSO4 10x GC-rich Enhancer
SoliSD™ Lyo-compatible RT-LAMP Kit	32-23-0000S (Request quote)	250rxn	SoliSD™ Glycerol-Free Bsm DNA Polymerase (40 U/μl) 300x RT Mix 10x RT-LAMP Reaction Buffer 100 mM MgSO4 10x GC-rich Enhancer

FL-32-21-V3



For further details and ordering please contact [info@solisbiodyne.com](mailto:info@solisbiodyne.com) or call +372 740 9960

Lyophilized Lyo-compatible RT-LAMP Kit upon request