# SoliSD™ Lyo-compatible RT-LAMP Kit

| Cat. No. | Size (25 µl reactions) |
|---|---|
| 32-23-0000S | 250 reactions |

Store at –20°C upon receipt

FOR RESEARCH USE ONLY.
NOT FOR USE IN DIAGNOSTIC PROCEDURES.

**Description:**
Isothermal DNA polymerase is an *in silico* designed DNA-directed DNA polymerase, based on the Large Fragment of the DNA polymerase from the genus *Bacillus smithii*. The enzyme has a strong strand displacement DNA polymerase activity and lacks 5′→3′ and 3′→5′ exonuclease activities. Thus, the enzyme is useful for applications where synthesis through double-stranded DNA regions is required, such as loop-mediated isothermal amplification (LAMP). Isothermal DNA Polymerase functional similarity to Bst and Bsm DNA polymerases allows its use in respective applications.
Isothermal DNA polymerase is expressed recombinantly in *E. coli* and has enhanced stability due to the incorporated Stability TAG (covered by the patent EP2501716).
SoliSD™ Glycerol-Free Bsm DNA Polymerase (40 U/µl) is fully compatible with lyophilization.

**Kit content:**
- **SoliSD™ Glycerol-Free Bsm DNA Polymerase** (40 U/µl, 0.050 ml)
- **300x RT Mix** (250 rxn)
  - *FIREScript®*
  - *SOLIScript®*
  - *RiboGrip®*
- **10x RT-LAMP Reaction Buffer** (1 ml)
  *200 mM Tris-HCl; 150 mM $(NH_4)_2SO_4$; 1% Tween-20; 250 mM KCl; additives*
- **100 mM $MgSO_4$** (0.5 ml)
- **10x GC-rich Enhancer** (0.5 ml)

**Shipping and Storage conditions:**
Routine storage: at -20°C.

The recommended reaction mixture protocol and cycling conditions are based on Solis BioDyne test results and should be considered as a starting point for reaction optimization tests. The optimal conditions may vary depending on the cycler model and ramp rate.

Manufactured by Solis BioDyne in compliance with the ISO 9001 and ISO 13485 certified Quality Management System.

**Recommended RT-LAMP reaction mix with SoliSD™ Bsm DNA Polymerase:**

| Component | Volume | Final concentration |
|---|---|---|
| Water, nuclease-free | up to 25 µl | |
| 10x RT-LAMP Reaction Buffer | 2.5 µl | 1x |
| 100 mM $MgSO_4$[a] | 1.6 µl | 6.4 mM |
| 10x GC-rich Enhancer[b] | Variable | Variable |
| SoliSD™ Glycerol-Free Bsm DNA Polymerase (40 U/µl)[c] | 0.2 µl | 0.32 U/µl |
| 300x RT Mix[d] | 0.083 µl | 1x |
| dNTPs | Variable | 1-2 mM |
| RT-LAMP primers[e] | Variable | Variable |
| DNA template | Variable | Variable |
| **Total** | **25 µl** | |

[a] Optimal concentration of $MgSO_4$ in LAMP is 6-7 mM, consider higher concentrations for multiplex reactions.
[b] The addition of GC-rich Enhancer is optional, consider adding 1x, 2x, or 5x final conc. to the reaction mix in case of a GC-rich template.
[c] The optimal concentration of polymerase should be titrated depending on the application.
[d] Lyo-compatible reverse transcriptase mix with RNase Inhibitor.
[e] Optimal results may require titration of primer concentration, with a starting point of 200 nM for F/B, 400 nM for loop primers, and 1,6 µM for inner primers.

For real-time fluorescence-based product detection, add intercalating fluorescent dye into the reaction mix according to the manufacturer's recommendation.

**Perform reaction at 59°C for 20-60 min.**
SoliSD™ Bsm DNA polymerase working temperature is 51-62°C. The optimal temperature of the assay may vary depending on the primers and final buffer conditions.
We recommend screening several sets of primers to achieve the best sensitivity and eliminate the possibility of amplification in an NTC (no-template control) reaction.

**Contamination control:**
Due to the nature of the enzyme and primers used in LAMP reactions, opening reaction vessels following amplification is not recommended.

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**Safety warnings and precautions:**
This product and its components should be handled only by persons trained in laboratory techniques. It is advisable to wear suitable protective clothing, such as laboratory overalls, gloves, and safety glasses. Care should be taken to avoid contact with skin or eyes. In case of contact with skin or eyes, wash immediately with water. Refer to the Safety Data Sheet for more information.

**Technical support:**
Contact your sales representative for any questions or send an email to support@solisbiodyne.com

Online chat is available at www.solisbiodyne.com

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**Permitted Use:** This product is supplied for Research Use Only (the **Permitted Use**). It is suitable for use as a component of molecular diagnostic assays, where applicable country laws allow. This product alone does not provide any diagnostic result. If the customer wishes to use the product for any purpose other than the Permitted Use, including (without limitation) resale or alteration, the customer should obtain the appropriate license from Solis BioDyne. Some applications of this product may require a license/licenses from one or more third parties which are not provided by the purchase of this product. Users should obtain the license if required. Covered by the patent EP2501716, made by the methods of US Patent No 9,321,999.



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