Product Manual

Product Name	LbuCas13a
Source	Recombinant expression in Escherichia coli
Catalog Number	CSB-DEM038
Physical Form	Liquid
Storage Conditions	-20 ±5°C
Molecular Weight	138.5 kDa
Storage Buffer	20 mM Tris-HCl (pH 7.5), 200 mM NaCl, 20% glycerol, 1 mM DTT
Quality Control	No residual exo- and endonucleases
Shelf Life	12 months

Product Description

CRISPR-Cas13a protein, with two HEPN domains, is a single-structure protein of the CRISPR-Cas system, with a size of 138.5 kDa. Cas13a is a type VI CRISPR-Cas system effector protein, possessing RNA-guided RNA cleavage activity. It is an endonuclease system that targets RNA guided by guide RNA, and it holds significant value in the development and research of RNA tools and the expansion of CRISPR system applications in gene editing.

Product components

Component No.	Component Name	Specifications	
1	10×Cas13 Buffer	1mL	5mL

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2	LbuCas13a	50μl(2 μM)	100μl(10 μM) 21

Operating instructions

1. Preparation of Reaction Substrate with T7 Promoter Sequence

The reaction substrate can be prepared as the nucleic acid amplification product using methods such as LAMP/PCR/RPA. When designing primers, the T7 promoter sequence (5'-TAATACGACTCACTATAGGG-3') should be added.

2. Recommended Reaction System

Composition	Final concentration
ddH_2O	Up to 50 μL
10×Cas13 Buffer	1×
100 mM dNTPs	1 mM each
Probe (10 μM)	40-100 nM
gRNA	20-80 nM
LbuCas13a	40-100 nM
RNase Inhibitor	40 U
T7 RNApolymerase	30 U
Reaction Substrate	Appropriate amount

3. Recommended Fluorescence-based Reaction Procedure

Temperature	Time	Number of cycles
37°C	30 -60min	1
1-4 minutes, read fluorescence once		

Important Notes

1. Reagents to be provided by the customer include probes, gRNA, RNase Inhibitor, and T7 RNA polymerase, among others.

2. Probes can be used with fluorescence probes for real-time detection or with colloidal gold probes and matching test strips for colloidal gold detection.

3. gRNA can be designed using the gRNA design method of CRISPR/Cas13 or by using online gRNA design tools.

4. Suitable instruments include an ELISA reader or other quantitative PCR instruments with FAM fluorescence channels.