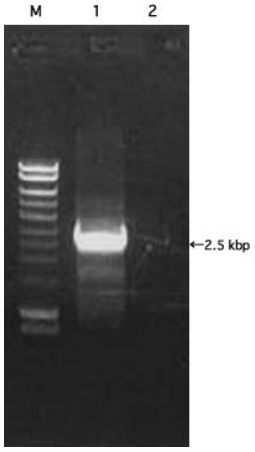
Examples of PrimeSTAR® HS DNA Polymerase (Cat.# R010A) Applications

Note: experimental data were provided by scientists at Tokyo University of Science, Kobe University, and Obihiro University of Agriculture and Veterinary Medicine

• PCR using *Thermus thermophilus* HB8 genomic DNA as a template

Data kindly provided by Dr. Masatsune Takehara, Sakaguchi Laboratory, Department of Applied Biological Science, Faculty of Science and Technology, Tokyo University of Science

A high-fidelity PCR enzyme from another company was unable to amplify the target sequence, but amplification products were successfully obtained using PrimeSTAR HS DNA Polymerase from Takara Bio. Furthermore, sequence analysis of the amplified product did not detect any errors (in a total of 5010 bases of sequence data).



M: Molecular weight marker
1: PrimeSTAR HS DNA Polymerase
2: High-Fidelity PCR enzyme from Company A

Template: *Thermus thermophilus* HB8 Genomic DNA (Cat.# 3071)
Amplified Product Length: 2.5 kb
Template Quantity: 1 µl (50 ng)

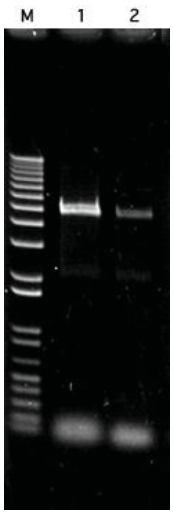
PCR Conditions (for PrimeSTAR HS):

98°C	10 sec.	┐
55°C	15 sec.	├ 30 cycles
72°C	3 min.	┘
↓		
4°C	hold	

• PCR using *Pyricularia oryzae* Fungus cDNA as a Template

Data kindly provided by Dr. Naoki Kakutani, Nakayashiki Laboratory, Department of Environmental Control (Plant Pathology), Faculty of Agriculture, Kobe University

PrimeSTAR HS DNA Polymerase demonstrated more efficient amplification than a high-fidelity PCR enzyme from another company.



M: Molecular weight marker
1: PrimeSTAR HS DNA Polymerase
2: High-Fidelity PCR enzyme from another company

Template: *Pyricularia oryzae* cDNA
Amplified Product Length: ~5 kb
Template Quantity: 1.0 µl from the 20 µl reverse transcription reaction
(equivalent to 50 ng of total RNA)

PCR Conditions (for PrimeSTAR HS):

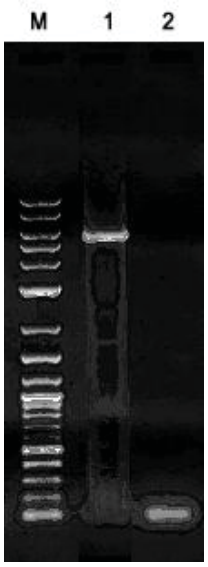
96°C	10 sec.	┐
55°C	15 sec.	├ 28 cycles
72°C	4 min.	┘
↓		
72°C	10 min.	1 cycle

Note: experimental data were provided by scientists at Tokyo University of Science, Kobe University, and Obihiro University of Agriculture and Veterinary Medicine

• Amplification using a Porcine Leptin Expression System (pET-30b)

Data kindly provided by: Dr. Hideto Kuwayama, Course in Food Production Science, Department of Animal Husbandry, Obihiro University of Agriculture and Veterinary Medicine

Applification of the target failed when a high-fidelity PCR enzyme from another company was used, but amplification products were successfully obtained using PrimeSTAR HS DNA Polymerase. Furthermore, no errors were found by DNA sequence analysis (in 1734 bases of sequence data).



M: Molecular weight marker (2-Log DNA ladder, NEB, Inc.)
1: PrimeSTAR HS DNA Polymerase
2: High-Fidelity PCR enzyme from another company

Template: Porcine leptin expression plasmid (in pET-30b)
Template Length: Approximately 6 kb
Template Quantity: 30 pg/15 µl reaction

PCR Conditions (for PrimeSTAR HS):

98°C	20 sec.	
↓		
98°C	10 sec.	┐
53°C	15 sec.	├ 30 cycles
68°C	6 min.	┘
↓		
68°C	2 min.	