

Rally Racing of SEDI Thermo Cycler

INTRODUCTION

For all customers, the system with long-term usage stability and reproducibility takes pace of first consideration when people got a new system. Performance of SEDI thermo cycler is shown as in previous technical bulletins with high temperature uniformity and good cycling stability. However, the long-term stability and reproducibility of SEDI thermo cycler is tested in this section after four months continuously cycling.

MATERIALS

- SEDI thermo cycler (Wealtec)
- Target DNA, 5'-Primer, and 3'-Primer samples were kindly provided by Dr. Hu's lab in Graduated Institute of Physiology in National Taiwan University, Taiwan.
- 2X Ready to Load PCR Master Mix (MDBio)

PROCEDURES

- Prepare stock solution with following recipes

Reagent	Each Rex (μl)	28 Rex (μl)
DNA Template	1	29
5'-Primer 50 nM	1	29
3'-Primer 50 nM	1	29
Master Mix	4	116
ddH ₂ O	13	377
Total	20	580

- Aliquot 28 samples with 20 μl stock solution each into 96 wells plate with following arrangement:

	1	2	3	4	5	6	7	8	9	10	11	12
A	1			2			3			4		
B			25						27			5
C		13			14			15			16	
D	12					21	22					
E						23	24					6
F		20			19			18			17	
G	11			28						26		
H			10			9			8			7

- Run the SEDI thermo cycler with following cycling program:
Step 0: 95°C, 05:00, Off
Step 1: 95°C, 01:00
Step 2: 95°C, 00:30
Step 3: 56°C, 00:30
Step 4: 72°C, 00:30, Go To Step 25 cycles
Step 5: 72°C, 02:00
Storage: ON
- After finish with the reaction, separate 10 µl samples along with 5 µl 100 bp ladder in 1.5% agarose gel with 0.5x TAE buffer.
- Stain the gel with EtBr solution for 10 minutes.
- Filed with KETA ML imaging system.

RESULT

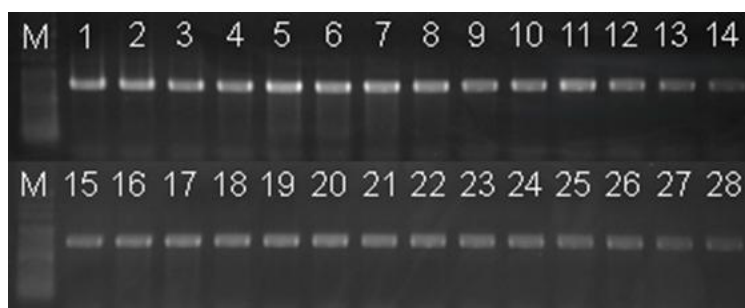


Figure 1. Result of first polymerase chain reaction cycling regimes after assembling

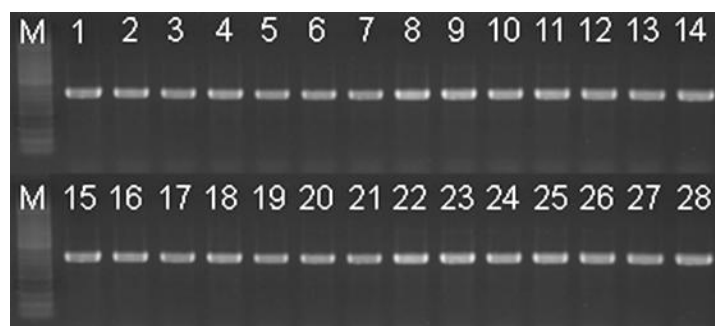


Figure 2. Result of polymerase chain reaction after 4 months continuous operation

DISCUSSION

For continuous testing of SEDI thermo cycler for long-term performance and potential programming defects, SEDI thermo cycler was checked with the same polymerase chain reaction program every working day after check with the first polymerase chain reaction result (as in figure 1). After simulated with four months operation in laboratory, same condition of polymerase chain reaction was tested again (as in figure 2) to check the performance of SEDI thermo cycler. No matter the first or the latest testing results, they both performed successfully and displayed with highly temperature uniformity. According to the result, the SEDI thermo cycler was proved to have exactly the same performance after gone through more than four months long-term operation.