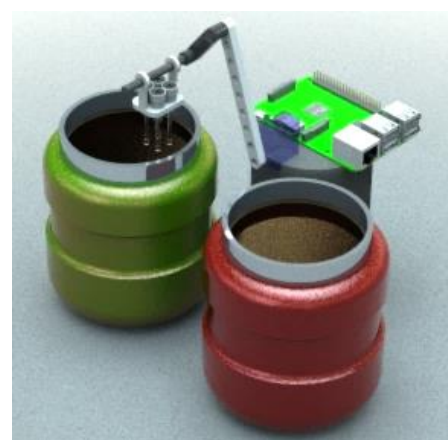


The Thermos Thermal Cycler

A \$200 thermal cycler that delivers reliable PCR in 13 minutes.

The Thermos Thermal Cycler (TTC) is a low-cost and portable high-speed polymerase chain reaction (PCR) instrument that allows nucleic acid amplification to be performed in low-resource settings. With an innovative design that eliminates temperature ramping, and excellent passive thermal control via thermoses, the TTC enables anyone to perform reliable PCR without needing active temperature control and continuous AC power supply.



Speed and Sensitivity



We amplified 281 bp of the nuc gene from 2000, 200, 20, or 2 copies of *S. aureus* genomic DNA.

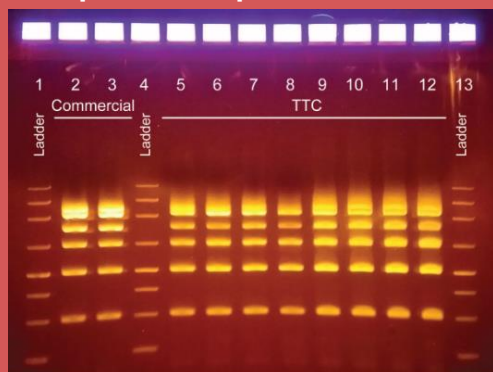
Lanes 1-4: Commercial thermal cycler PCR products from a 48 minute protocol.

Lane 5: Ladder.

Lanes 6-9: TTC PCR products from a 22 minute protocol using thin-walled plastic tubes.

Using glass capillary tubes, the same reactions can be completed in ~13 minutes.

Multiplex PCR Capable



6-Plex PCR with amplicons at 100, 200, 300, 400, 500, and 600 bp.

Lane 1: Ladder

Lanes 2-3: Commercial thermal cycler amplicons from an 84 minute protocol.

Lanes 5-12: TTC amplicons from a 28 minute protocol in plastic tubes.

Lane 13: Ladder

See more of our results at:

DOI: 10.1371/journal.pone.0131701

Faster Amplification

Achieve 13 minute PCR amplification times using standard PCR chemistry. While other commercial thermal cyclers offer maximum ramping rates of 5°C/s, with plastic tubes, the TTC achieves heating ramping rates up to 15°C/s and cooling ramp rates up to 13°C/s.

	Heating (°C/s)	Cooling (°C/s)
Eppendorf Mastercycler personal	0.6	0.5
Bio-Rad CFX96 real-time system	1.2	1.1
Bio-Rad plastic PCR tubes in TTC	5.0	6.0
Roche glass capillary tubes in TTC	15	13

Low-Cost, light weight, quality results

- While only \$200 and 5 lbs., the TTC still delivers the same quality results you expect.

Ready for the PCR tubes you use

- Water provides superior heat transfer and flexibility. All PCR tubes are compatible and the TTC can accommodate up to 8 tubes.

Customize to the protocols you need

- Easily create and customize complex protocols.
- Standard PCR protocols can be adapted with little to no optimization.
- Use 5-50µl reaction volumes in glass or plastic tubes, various DNA/RNA types, and different enzyme brands while still achieving fast amplification.

For more info, contact us at:
info@aibiosciences.com

