

Exploring PCR

Explore PCR applications

- Mutagenesis
- Cloning
- Sequencing
- Genotyping
- Gene expression
- Pathogen detection
- Multiplexing

10⁹ copies of **DNA** are made after **30 cycles** of **PCR** in **1** reaction

Explore different types of **PCR**

1

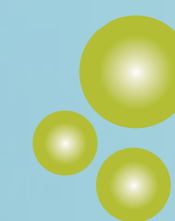
Quantitative PCR

- 84% of researchers doing qPCR use a hot-start DNA polymerase
- 79.1% analyze qPCR data by the standard curve method
- 44% use predeveloped assays

Probe-based chemistries



VS.

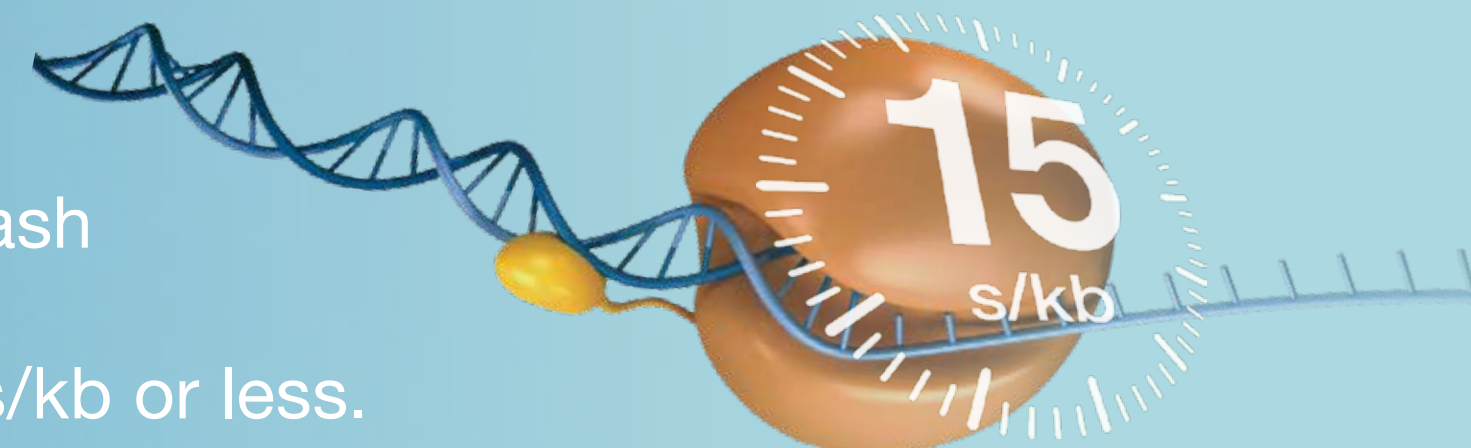


SYBR™ technology-based chemistries

2

Fast PCR

Thermo Scientific™ Phusion™ Flash High-Fidelity PCR Master Mix features extension times of 15 s/kb or less.



3

Reverse transcription PCR

- Reverse transcriptases are the replicating enzymes of retroviruses
- **RT-PCR** can happen in a **1-step assay** or a **2-step assay**

RNA template

cDNA

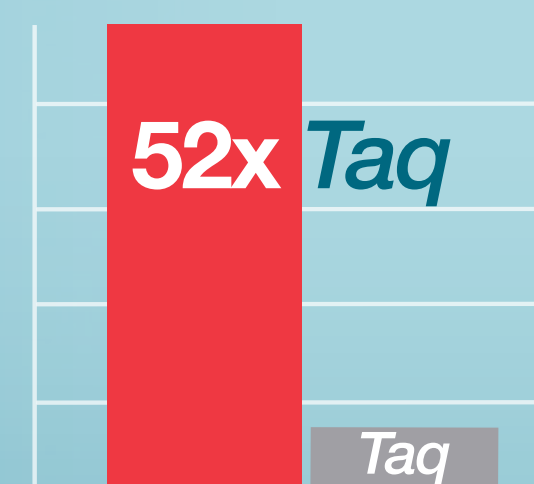
PCR

4

High-fidelity PCR

Thermo Scientific™ Phusion™ High-Fidelity DNA Polymerase is **52x more accurate** than *Taq* polymerase.

$$\frac{1}{\text{polymerase error rate}} = \text{Fidelity}$$



5

Direct PCR

Go straight from sample to DNA amplification.



1985
PCR
published
in *Science*.

1989 **Taq**
Polymerase is named
"Molecule of the Year"
by *Science*.

Learn more at thermofisher.com/tsmolbio

ThermoFisher
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