MAKE EVERY STEP COUNT

In the journey to scientific discovery, every step plays a critical role in reaching your research goals. Choosing the right tools and products in each part of the workflow can accelerate your experimental success.

INTEGRAL TO MOLECULAR BIOLOGY RESEARCH

thermofisher.com/everystepcounts

REVERSE TRANSCRIPTION

There are

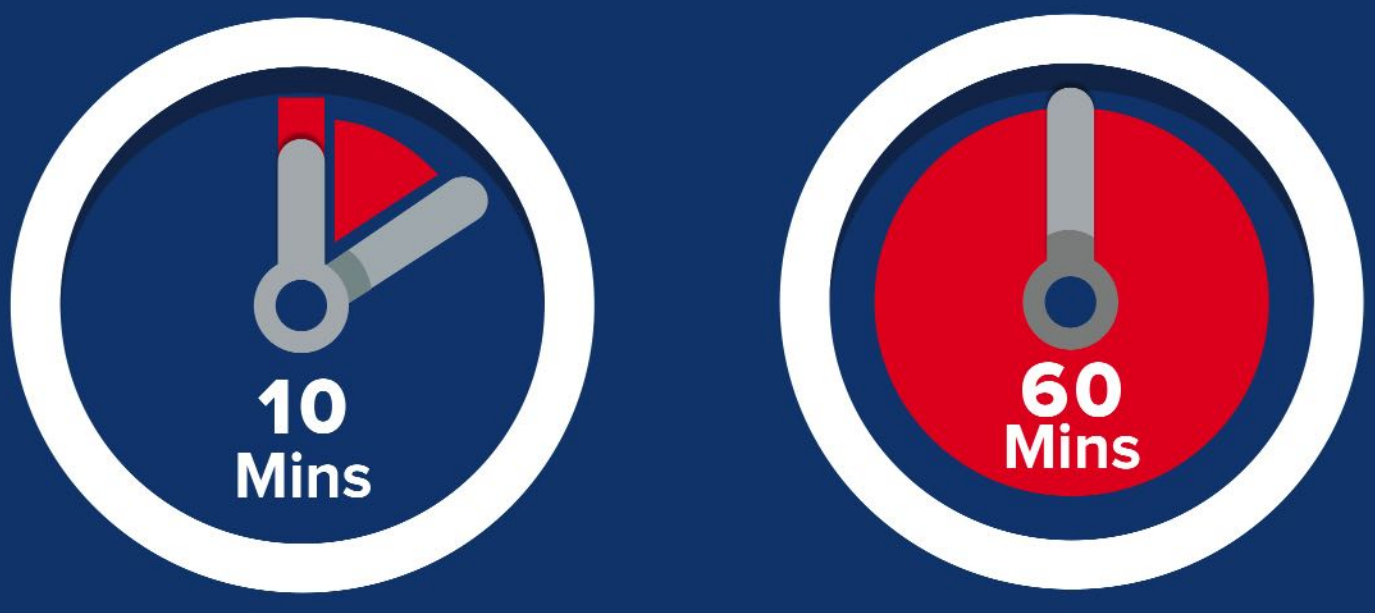
50,000+

publications, citations, reviews, and patents with the term SuperScript Reverse Transcriptase

SPEED

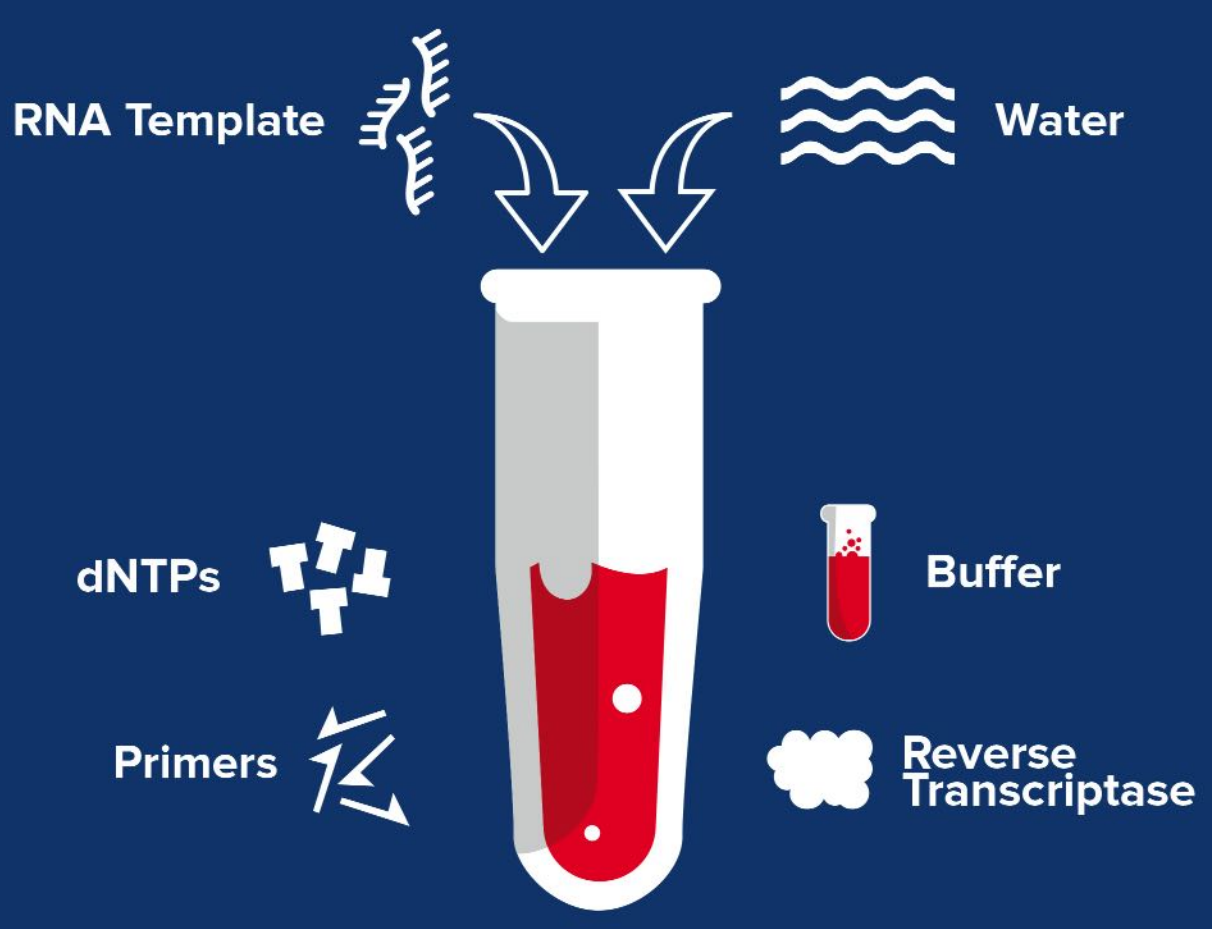
cDNA synthesis in record time

HIGH PROCESSIVITY of SuperScript IV RT enables synthesis of **longer DNA** in **shorter time** with higher efficiency



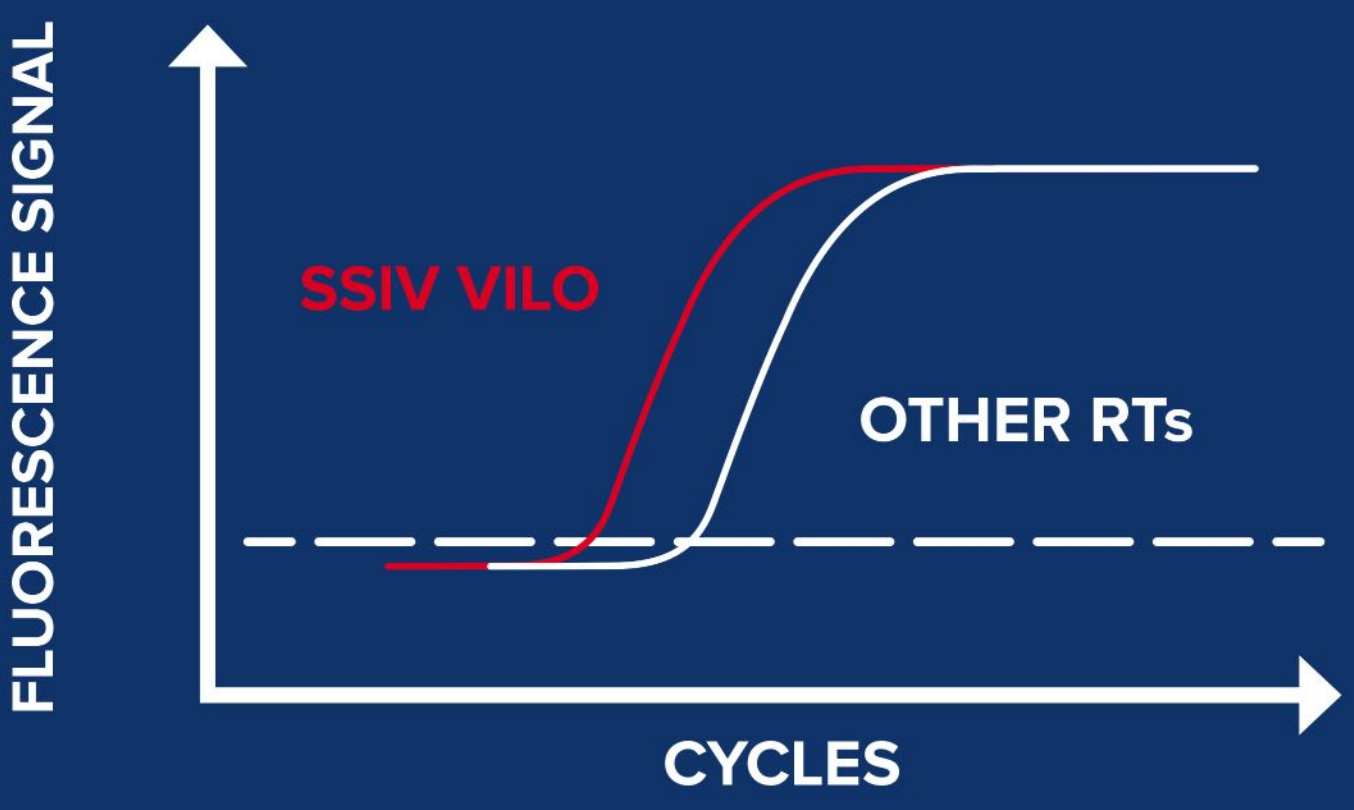
SIMPLICITY

Single-tube master mix with all RT reaction components



QUALITY

More cDNA, better qPCR detection



C_t improved by **2 cycles** corresponds to **4x more cDNA** synthesized, enabling detection of **low-input RNA**

thermofisher.com/4vilo

PCR

Polymerase Chain Reaction

amplifies 1 copy of DNA to millions for applications like:

Gene Detection
Cloning
Genotyping
Sequencing
Diagnostics
Forensics

SPEED

Impact on cloning, 3kb fragment, 30 cycle PCR

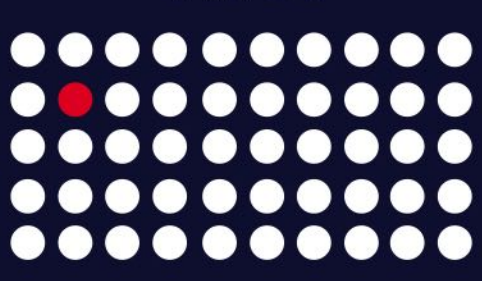
PCR Reaction Time

Pfu **DNA** Polymerase
3.5 hours

Platinum SuperFi DNA Polymerase
1 hour

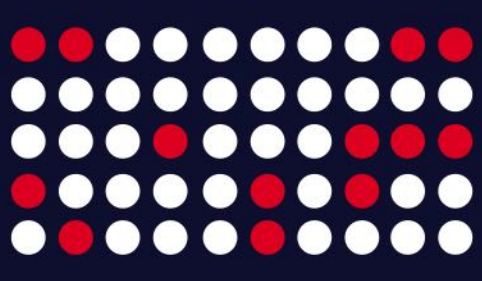
Clones that may contain error

1 in 50



Platinum SuperFi DNA Polymerase

1 in 4



Pfu DNA Polymerase

SIMPLICITY

Reduce error and save time with 2x **Green** master mix for direct gel loading

4 Components

Vs.

7 Components

2x Green Master Mix
Water
Primers
Template

With master mix

Buffer
DNA Polymerase
dNTPs

Mg^{2+}
Water
Primers
Template

With stand-alone enzyme

QUALITY

>100x *Taq* fidelity with Platinum SuperFi DNA Polymerase

Error rates of high-fidelity versus low-fidelity DNA polymerases

1 in MILLIONS

Platinum SuperFi DNA Polymerase

1 in THOUSANDS

Taq DNA Polymerase

thermofisher.com/platinumsuperfi

ELECTROPHORESIS

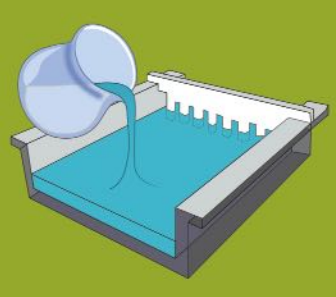
Agarose is derived from agar, a component of red seaweed

100 tons of agarose are used for electrophoresis every year

SPEED

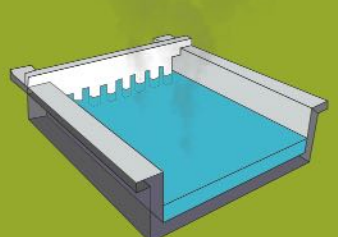
Time savings in nucleic acid eletrophoresis (including gel purification)

E-Gel precast gels can save:



Traditional gels **2 hours**

E-Gel Precast gels **0.8 hour**



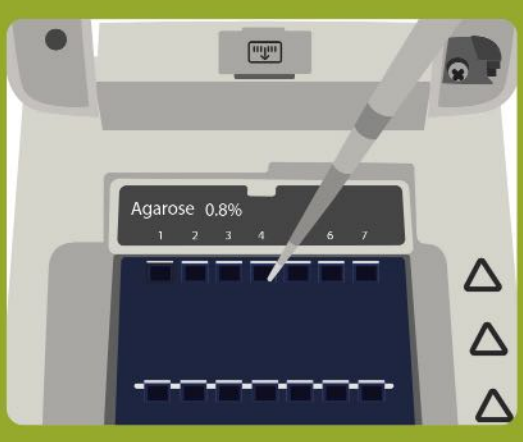
Traditional gels **5 hours**

E-Gel Precast gels **1.5 hours**

SIMPLICITY

As easy as 1-2-3

3 simple steps with E-Gel precast gels, compared to 7+ steps with traditional gels, to separate and recover DNA samples



1. LOAD

2. RUN & ANALYZE

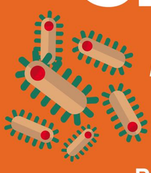
3. RETRIEVE

QUALITY

Safer or more sensitive than ethidium bromide (EtBr)

thermofisher.com/egel

CLONING



E. coli **is a common cloning organism because it doubles every 20 minutes**

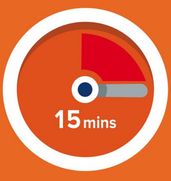
Restriction Enzyme Cloning

10 Common Applications

- Gene Expression
- Genome Editing
- Gene Modulation
- Vaccine and Drug Development
- Gene Therapy
- Sequencing
- DNA Library Preparation
- Gene Assembly
- Mutation Analysis
- Recombinant Protein Production

SPEED

Complete digestion in **15 minutes** with Anza restriction enzymes for all DNA types



Anza
restriction enzymes

Traditional
restriction enzymes

SIMPLICITY

Power of 1's for restriction digestion with Anza enzymes

1 protocol with 2 simple steps for all DNA types

1 digestion temperature at 37°C

1 buffer with direct gel loading for all Anza restriction and DNA modifying enzymes

QUALITY

Designed for confidence and reproducible results

No star activity
with all Anza restriction enzymes
even with overnight digestion

No trial and error for **dephosphorylation**
All Anza enzymes **individually tested** for optimal conditions

thermofisher.com/anza

invitrogen
by Thermo Fisher Scientific