

# FastDigest Restriction Enzymes

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## One buffer for 176 enzymes—it's that easy

Thermo Scientific™ FastDigest™ Restriction Enzymes support complete and fast digestions.

### Why use FastDigest enzymes?

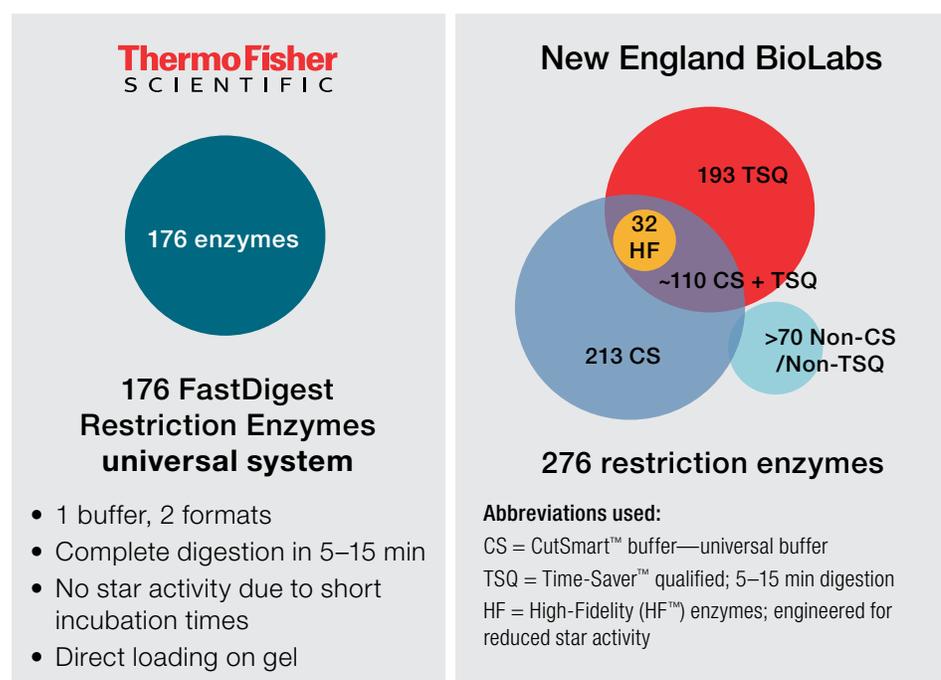
FastDigest enzymes are an advanced line of restriction enzymes that offer fast and complete digestion of DNA in a single, universal buffer.

### Why use the colorless buffer?

We recommend using the colorless Thermo Scientific™ FastDigest™ Buffer for applications that require product analysis by fluorescence excitation (e.g., concentration measurements in UV light).

### Why use the green buffer?

Thermo Scientific™ FastDigest™ Green Buffer allows for direct loading of the reaction mixture on gels. The green buffer contains a density reagent and two tracking dyes that do not interfere with downstream applications, including dephosphorylation, end-repair reactions, and ligation.



### Features (Figure 1):

- The first restriction enzyme offering using a universal buffer
- Double and multiple digestions in a universal buffer for any combination of enzymes
- No sequential digestions and buffer changes
- 176 unique specificities
- Complete digestion in 5–15 minutes
- Direct loading of reaction mixture on gels

Figure 1. Simplicity of FastDigest restriction enzymes, a universal system using one buffer vs. the complicated NEB™ offering. Note, this is an illustrative image depicting the comparison of features between the two companies.

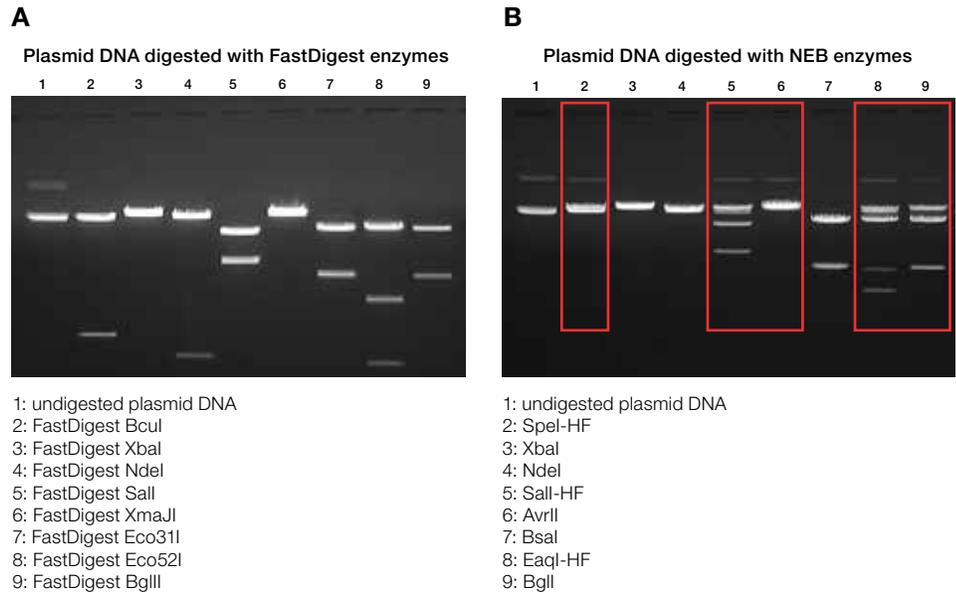
## Technical details

- 1 µL of FastDigest enzyme cleaves 1 µg of substrate DNA in 5–15 minutes in FastDigest buffer (Figure 2)
- Designed to eliminate star activity due to short incubation times
- All enzymes qualified for rapid and complete digestion of all types of DNA
- Protocols for plasmid, genomic, and viral DNA as well as PCR products are provided

## Usage and applications

Choose FastDigest enzymes for traditional molecular cloning techniques, including:

- Clone analysis
- Preparation of DNA for cloning
- Digestion of PCR products
- Restriction fragment length polymorphism (RFLP) genotyping
- Digestion of difficult-to-cleave DNA



**Figure 2. Comparison of digestion efficiencies of restriction enzymes.** (A) FastDigest restriction enzymes digest plasmid DNA much more efficiently compared to the (B) NEB enzymes. In this experiment, using the NEB protocol, 1 µg of plasmid DNA was digested in ~15 minutes.

## Ordering information

For a complete list of the 176 FastDigest enzyme specificities, visit [thermofisher.com/fastdigest](http://thermofisher.com/fastdigest)

To try our top 13 enzymes, and both the colorless and green FastDigest Buffers, get our Thermo Scientific™ FastDigest™ Value Pack (Cat. No. K1991), or visit [thermofisher.com/fdvaluepack](http://thermofisher.com/fdvaluepack)

## Buffer compatibility with downstream applications

Thermo Scientific™ DNA/RNA modifying enzymes	Activity in FastDigest Green Buffer or FastDigest Buffer (colorless)
DNA Polymerase I, <i>E. coli</i>	100%
Klenow Fragment	100%
Klenow Fragment, exo-	100%
T7 DNA Polymerase	100%
T4 DNA Ligase*	75–100%
FastAP™ Thermosensitive Alkaline Phosphatase	100%
T4 Polynucleotide Kinase (T4 PNK)	100%

\* 0.5 mM ATP is required for T4 DNA ligase activity.

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