

FastDigest restriction enzymes



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 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.

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).

Features (Figure 1):

- The first restriction enzyme offering that uses 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

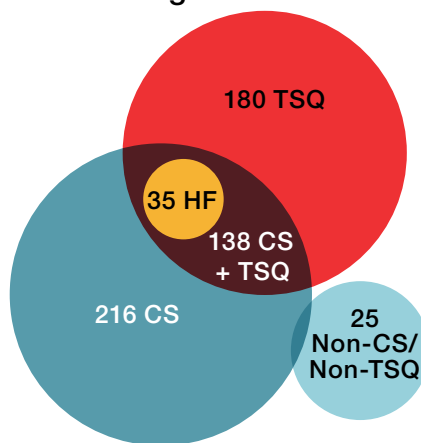
Thermo Fisher Scientific



176 FastDigest restriction enzymes universal system

- 1 buffer, 2 formats
- Complete digestion in 5–15 minutes
- No star activity due to short incubation times
- Direct loading on a gel

New England Biolabs



277 restriction enzymes

- CS = rCutSmart™ buffer—universal buffer
- TSQ = Time-Saver™ Qualified enzyme; 5–15 minute digestion
- HF = High-Fidelity (HF™) enzyme; engineered for reduced star activity

Figure 1. Simplicity of FastDigest restriction enzymes, a universal system using one buffer versus the complicated NEB™ offerings. Note, this is an illustrative image depicting the comparison between features of restriction enzymes offered by 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
- Golden Gate cloning
- *In vitro* transcription

Ordering information

For a complete list of the 176 FastDigest enzyme specificities, visit thermofisher.com/fastdigest

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

Buffer compatibility with downstream applications

Thermo Scientific™ DNA/RNA modifying enzymes	Activity in FastDigest Green Buffer or FastDigest Buffer (colorless)	Cat. No.
DNA Polymerase I, <i>E. coli</i>	100%	EP0041, EP0042
Klenow Fragment	100%	EP0051, EP0052
Klenow Fragment, exo ⁻	100%	EP0421, EP0422
T7 DNA Polymerase	100%	EP0081
T4 DNA Ligase*	75–100%	EL0011, EL0012
FastAP™ Thermosensitive Alkaline Phosphatase	100%	EF0651, EF0652, EF0654
T4 Polynucleotide Kinase (T4 PNK)	100%	EK0031, EK0032
T4 DNA Polymerase	100%	EP0061, EP0062

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

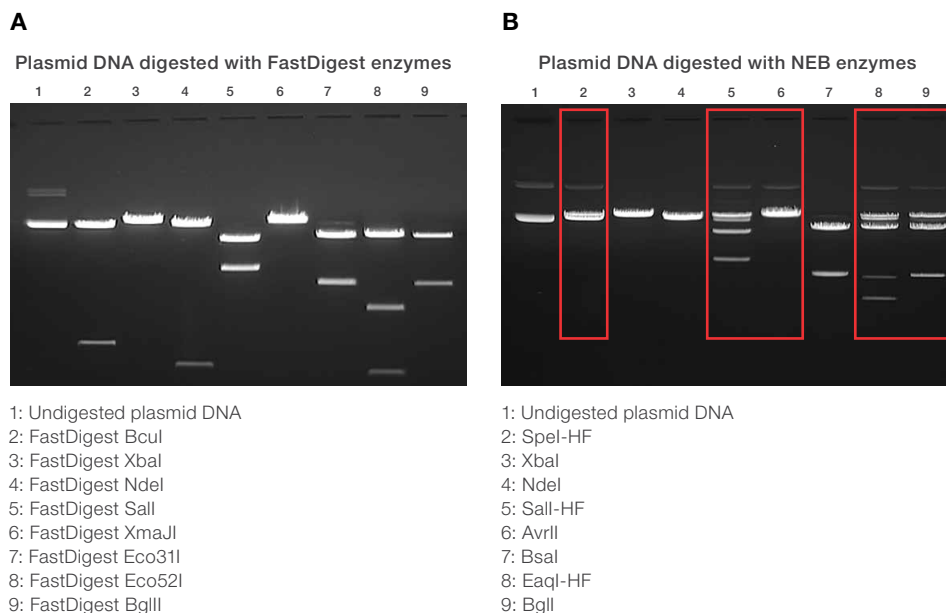


Figure 2. Comparison of digestion efficiencies of restriction enzymes. (A) FastDigest restriction enzymes digest plasmid DNA much more efficiently compared to the (B) NEB enzymes. In this experiment, using the NEB protocol, 1 µg of plasmid DNA was digested in ~15 minutes.

Learn more at thermofisher.com/fastdigest

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