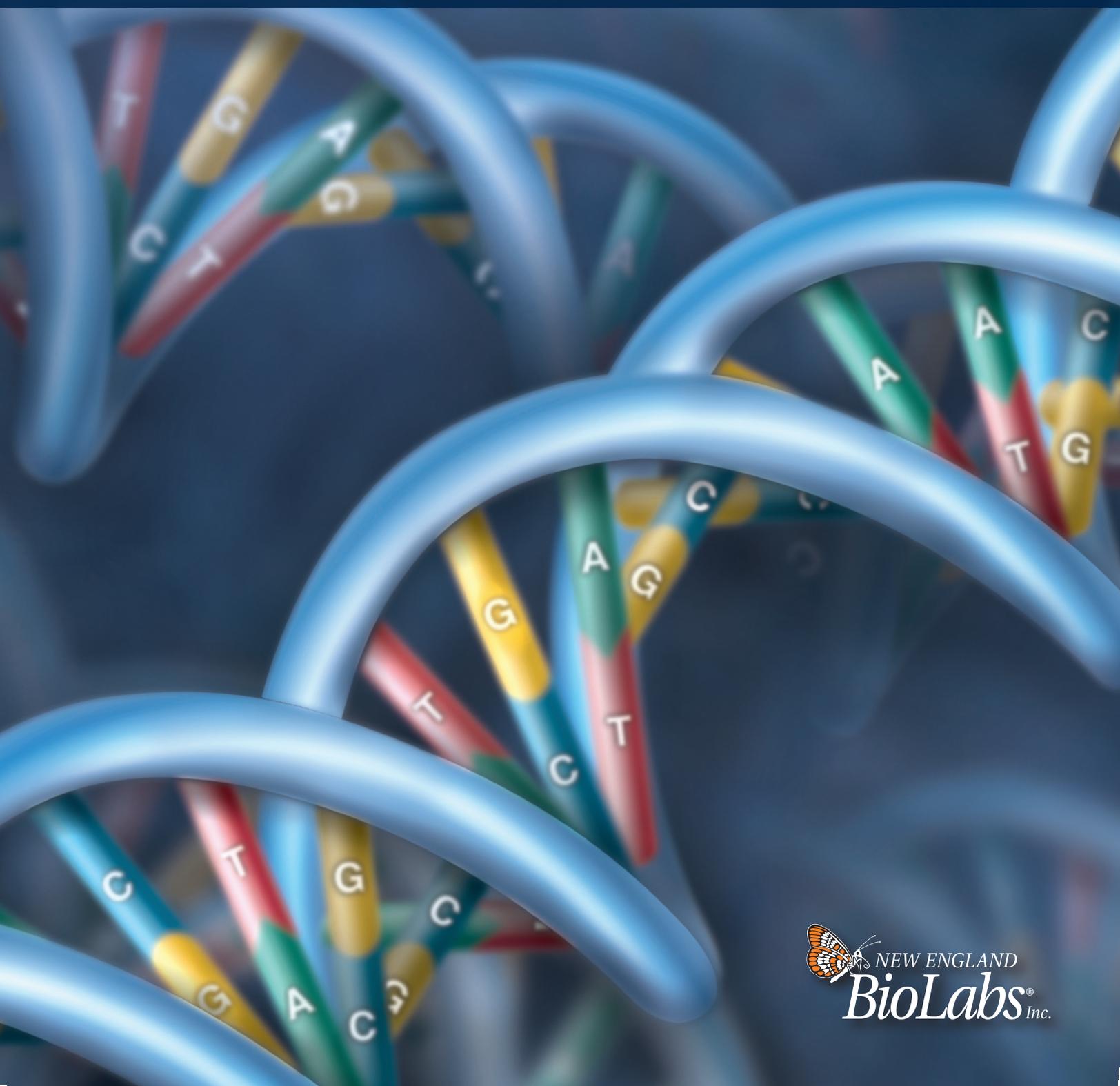


Cut Smarter *with* NEB Restriction Enzymes

OVER 205 ENZYMES ACTIVE IN A SINGLE BUFFER



Cut Smarter *with* Restricti

Looking to bring CONVENIENCE to your workflow?

Simplify reaction setup and double digestion with CutSmart® Buffer

Over 205 restriction enzymes are 100% active in a single buffer, CutSmart Buffer, making it significantly easier to set up your double digest reactions. Since CutSmart Buffer includes BSA, there are fewer tubes and pipetting steps to worry about. Additionally, many DNA modifying enzymes are 100% active in CutSmart Buffer, eliminating the need for subsequent purification.

For more information, visit www.NEBCutSmart.com

Speed up digestions with Time-Saver™ Qualified Restriction Enzymes

190 of our restriction enzymes are able to digest DNA in 5-15 minutes, and can safely be used overnight with no loss of sample. For added convenience and flexibility, most of these are supplied with our new CutSmart Buffer.

For more information, visit www.neb.com/timesaver

Keep it simple with our RE-Mix® Restriction Enzyme Master Mixes

RE-Mix Restriction Enzyme Master Mixes are pre-mixed solutions that contain enzyme, buffer, BSA and loading dye. Just add your DNA and water; it's that simple! RE-Mix master mixes are Time-Saver qualified so you can trust your reaction to digest to completion in 15 minutes, or leave it to digest overnight, with no degradation of your final product.

For more information, visit www.NEBREMix.com

Bring flexibility to your workflow

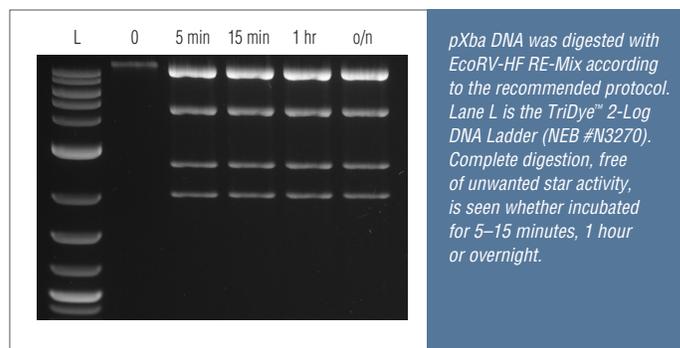
NEB offers the largest selection of restriction enzymes commercially available. With an evergrowing list to choose from, currently at 280 enzymes – including traditional restriction enzymes, nicking endonucleases, homing endonucleases, type IIS enzymes and methylation-sensitive enzymes for epigenetics studies – there is no need to look anywhere else.

Activity of DNA Modifying Enzymes in CutSmart Buffer

| ENZYME | ACTIVITY IN CUTSMART | REQUIRED SUPPLEMENTS |
|---|----------------------|---------------------------|
| Alkaline Phosphatase (CIP) | +++ | |
| Antarctic Phosphatase | +++ | Requires Zn ²⁺ |
| Bst DNA Polymerase | +++ | |
| CpG Methyltransferase (M. Sssl) | +++ | |
| DNA Polymerase I | +++ | |
| DNA Polymerase I, Large (Klenow) Fragment | +++ | |
| DNA Polymerase Klenow Exo ⁻ | +++ | |
| DNase I (RNase free) | +++ | Requires Ca ²⁺ |
| E. coli DNA Ligase | +++ | Requires NAD |
| Endonuclease III (Nth), recombinant | +++ | |
| Endonuclease VIII | +++ | |
| Exonuclease III | +++ | |
| GpC Methyltransferase (M. CviPI) | + | Requires DTT |
| McrBC | +++ | |
| Micrococcal Nuclease | +++ | |
| Nuclease BAL-31 | +++ | |
| phi29 DNA Polymerase | +++ | |
| RecJ ₁ | +++ | |
| Shrimp Alkaline Phosphatase (rSAP) | +++ | |
| T3 DNA Ligase | +++ | Requires ATP + PEG |
| T4 DNA Ligase | +++ | Requires ATP |
| T4 DNA Polymerase | +++ | |
| T4 Phage β-glucosyltransferase (T4-BGT) | +++ | |
| T4 Polynucleotide Kinase | +++ | Requires ATP + DTT |
| T4 PNK (3' phosphatase minus) | +++ | Requires ATP + DTT |
| T7 DNA Ligase | +++ | Requires ATP + PEG |
| T7 DNA Polymerase (unmodified) | +++ | |
| T7 Exonuclease | +++ | |
| USER Enzyme, recombinant | +++ | |

+++ full functional activity ++ 50–100% functional activity + 0–50% functional activity

See NEBCutSmart.com for full details.



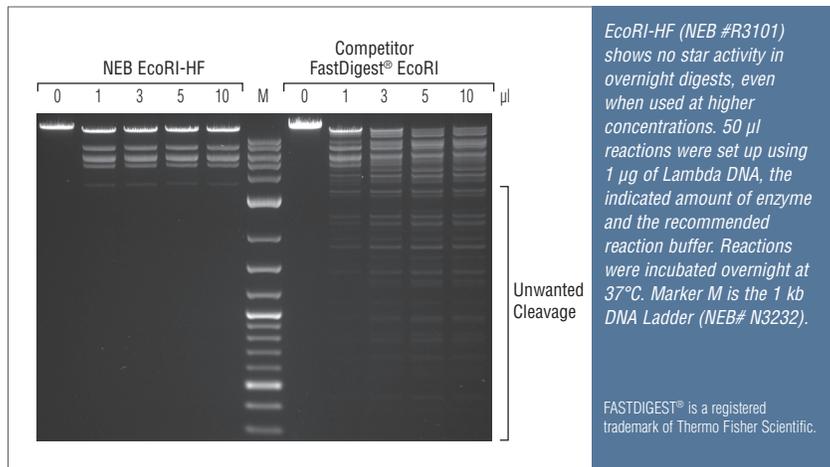
on Enzymes *from* NEB

Looking to optimize PERFORMANCE in your reaction?

Choose a High-Fidelity (HF®) Restriction Enzyme

As part of our ongoing commitment to the advancement and improvement of enzymes for the cloning and manipulation of DNA, NEB has developed a line of High-Fidelity (HF) restriction enzymes. These engineered enzymes have the same specificity as the native enzyme, with the added benefit of reduced star activity, rapid digestion (5-15 minutes), and 100% activity in CutSmart Buffer. They are also supplied with our new purple gel loading dye, which sharpens bands and eliminates UV shadow. Enjoy the improved performance of NEB's engineered enzymes at the same price as the native enzymes!

For more information, visit www.neb.com/HF



Online Tools

The Tools & Resources tab, accessible on our homepage, contains a selection of interactive technical tools for use with restriction enzymes. These tools can also be accessed directly in the footer of every web page.

Double Digest Finder



Use this tool to guide your reaction buffer selection when setting up double-digests, a common timesaving procedure. Choosing the right buffers will help you to avoid star activity and loss of product.

NEBcloner®



Use this tool to find the right products and protocols for each step (digestion, end modification, ligation and transformation) of your next traditional cloning experiment. Also, find other relevant tools and resources to enable protocol optimization.

REBASE®



Use this tool as a guide to the ever-changing landscape of restriction enzymes. REBASE, the Restriction Enzyme DataBASE, is a dynamic, curated database of restriction enzymes and related proteins.

Enzyme Finder



Use this tool to select restriction enzymes by name, sequence, overhang or type. Enter your sequence using single letter code, and Enzyme Finder will identify the right enzyme for the job.

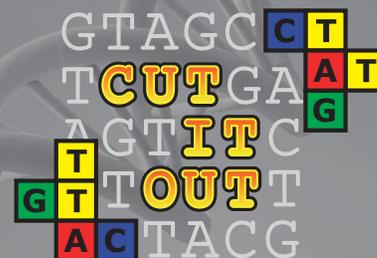
NEBcutter®



Identify the restriction sites within your DNA sequence using NEBcutter. Choose between Type II and commercially available Type III restriction enzymes to digest your DNA. NEBcutter will indicate cut frequency and methylation-state sensitivity.

Visit NEBCutSmart.com for information on the smarter choice of restriction enzymes.

Visit NEBcutitout.com to test your skills with your friends and colleagues



NEB Restriction Enzymes by the #s

 **280** Restriction enzymes available from NEB



↑
5C
4C
3C

Novel Application:
Chromosome conformation capture

Cutting to completion is critical to this application and NEB® offers the largest selection of robust 4-, 5-, and 6-bp cutters in the industry.

1 buffer

20X
CutSmart⁺
enzymes

These enzymes are 100% active in a single buffer, CutSmart⁺, making double digests so easy and convenient!



190 Time-Saver enzymes

Digest 1 µg of your substrate DNA in 5–15 minutes using 1 µl of our Time-Saver™ qualified enzymes. You can also use these in overnight reactions.

30 HF... all enzymes
Supplied with Gel Loading Dye, Purple (6X)

With our High-Fidelity (HF⁺) restriction enzymes, you'll see reduced star activity, and can rapidly digest your DNA (5–15 minutes) using our CutSmart Buffer. You'll also receive a tube of our purple gel loading dye, which sharpens bands and eliminates UV shadow.

ONLINE TOOLS



NEBcloner®



Enzyme Finder



Double Digest Finder



NEBcutter®



REBASE™

Visit NEBRestrictionEnzymes.com to find online tools, tech tips and video tutorials.



Twelve
8-base cutters

8-base cutters are known as rare-cutters – they cut less often in a genome and can therefore be useful in your cloning experiments.

46 Type IIS enzymes

Type IIs enzymes cleave outside of their recognition sequence and are useful in DNA assembly methods, including Golden Gate assembly.

10 Nicking enzymes

Nicking enzymes “nick” one strand of the dsDNA, rather than both. They are being used in applications such as SDA and optical mapping.

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Mixed Sources
Product group from well-managed forests and recycled wood or fibre
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