DNA-Hind III Digest

packaging		Mfr. No
100 µg	PolyMicroTube	**BP2556-200**

Applications: For sizing DNA fragments from 125 to 23.130 bp on agarose gels.
Recommended Gel: 1% agarose with loading amount of 0.5µg/lane.
Contains lambda DNA that has been digested with restriction enzyme.
Recommended Storage: -20°C
Not on TSCA inventory: for R and D use only; not for manufacturing or commercial purposes.

DNA-Hind III/phi X-174 RF DNA-Hae III Digest

packaging		Mfr. No
25 µg	PolyMicroTube	**BP2555-25**

Applications: For sizing DNA fragments from 72 to 23.130 bp on agarose gels.
Contains a combination of lambda DNA and phi X-174 RF DNA that has been digested with restriction enzyme.
Recommended Gel: 1% agarose with loading amount of 0.5-1.0µg/lane.
Heat before loading at 60°-65°C for 2 minutes.
Recommended Storage: -20°C
Not on TSCA inventory: for R and D use only; not for manufacturing or commercial purposes.

DNA-Hind III/phi X-174 RF DNA-Hae III Digest
Lyophilized Powder

packaging		Mfr. No
25 µg	PolyMicroTube	**BP2554-25**

Applications: For sizing DNA fragments from 72 to 23.130 bp on agarose gels.
Contains a combination of lambda DNA and phi X-174 RF DNA that has been digested with restriction enzyme.
Recommended Gel: 1% agarose with loading amount of 0.5-1.0µg/lane.
Heat before loading at 60°-65°C for 2 minutes.
Recommended Storage: -20°C
Not on TSCA inventory: for R and D use only; not for manufacturing or commercial purposes.

Ø X-174 RF DNA-Hae III Digest

packaging		Mfr. No
10 µg	PolyMicroTube	**BP2558-10**
100 µg	PolyMicroTube	**BP2558-100**

Applications: For sizing DNA fragments from 72 to 1.353 bp on agarose gels.
Recommended Gel: 1% agarose with loading amount of 0.5µg/lane.
Do not heat before loading.
Contains phi X-174 RF DNA that has been digested with restriction enzyme.
Recommended Storage: -20°C
Not on TSCA inventory: for R and D use only; not for manufacturing or commercial purposes.

Collagenase From Clostridium histolyticum — Islet Isolation Grade
Yellowish Brown Lyophilized Powder

packaging		Mfr. No
1 g	AmberGlass	**BP2649-1**

CAS: 9001-12-1

Activity ..... >=3.500units/g

Applications: Collagenase is most suitable for pancreatic islet isolation.
Unit Definition: One unit will liberate peptides from collagen equivalent in ninhydrin color to 3.0µmole of L-leucine in 18 hr. at pH 7.4 and 37°C.
Inhibitors:Hg^{2+}, Pb^{2+}, Cd^{2+}, Cu^{2+}, Zn^{2+}, EDTA, o-phenanthroline.
Recommended Storage: 0° to 5°C, desiccate

Cytosine-β-D-Arabinofuranoside Hydrochloride
White Powder

packaging		Mfr. No
100 mg	AmberGlass	**BP2512-100**
500 mg	AmberGlass	**BP2512-500**
5 g	AmberGlass	**BP2512-5**
10 g	AmberGlass	**BP2512-10**

$C_9H_{13}N_3O_5.HCl$
CAS: 69-74-9
MW: 279.67

H317, H319, H361d
P280, P281,
P305+P351+P338

FTIR ..... Conforms to standard
Melting Point ..... 185°-195°C
Optical Rotation α ^{25}D ..... +130° ± 5° (c=1, water)
Tested for ..... RNase activity, protease activity, and specific performance tests.
UV/VIS: lambda max (H_2O) ..... 280 ± 6nm

Applications: Cytosine-β-D-Arabinofuranoside Hydrochloride inhibits incorporation of labeled thymidine into DNA.
Recommended Storage: 4°C
Not on TSCA inventory: for R and D use only; not for manufacturing or commercial purposes.

Lysozyme, Egg White
White Crystalline Powder

packaging		Mfr. No
1 g	AmberGlass	**BP535-1**
5 g	AmberGlass	**BP535-5**
10 g	AmberGlass	**BP535-10**
25 g	AmberGlass	**BP535-25**
100 g	AmberGlass	**BP535-100**

CAS: 12650-88-3
EINECS: 235-747-3

Activity ..... Approx. 20.000 units/mg protein
Salmonella ..... None detected
Solubility ..... Pass test
Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: This enzyme is used to lyse E. coli for preparation of plasmid DNA from transformed cell cultures.
Recommended Storage: <0° C
Not on TSCA inventory: for R and D use only; not for manufacturing or commercial purposes.
UN 1198

OPTIZYME™ Alkaline Phosphatase
Source: Recombinant E. Coli Strain

packaging	Mfr. No
1000 units Poly Tube	**BP8097-1**
3000 units Poly Tube	**BP8097-5**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: Dephosphorylation of cloning vector DNA to prevent recircularization during ligation; PCR product clean-up: nucleotide degradation prior to sequencing of PCR product; Dephosphorylation of nucleic acid 5′-termini prior to labeling with T4 Polynucleotide Kinase; Other applications where dephosphorylation of DNA and RNA substrates is necessary; Protein dephosphorylation.
Description: OPTIZYME™ Alkaline Phosphatase catalyzes the release of 5′- and 3′- phosphate groups from DNA, RNA and both ribo- and deoxyribonucleoside triphosphates. OPTIZYME Alkaline Phosphatase also removes phosphate groups from proteins.
Supplied With: 10X OPTIZYME™ AP Buffer (100mM Tris-HCl (pH 8.0 at 37°C), 50mM MgCl2, 1M KCl, 0.2% (v/v) Triton X-100, 1 mg/mℓ BSA)
Concentration: 1 u/µℓ
Storage Buffer Components: 20 mM HEPES-NaOH (pH 7.4), 1 mM MgCl2, 0.1 mM ZnCl2, 0.1% (v/v) Triton X-100 and 50% (v/v) glycerol.
Unit Definition: One unit is the amount of the enzyme required to dephosphorylate 5′-termini of 1 µg of linearized pUC57 DNA in 10 min at 37°C in OPTIZYME AP Buffer.
Tested for: Endo-, exodeoxyribonuclease and ribonuclease-free; Functionally tested for dephosphorylation of 5′-termini of overhanging, recessed and blunt DNA.
Recommended storage: -20°C

OPTIZYME DNA Polymerase I
Source: Recombinant E. Coli Strain

packaging	Mfr. No
500 units Poly Tube	**BP8109-1**
2500 units Poly Tube	**BP8109-5**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: DNA labeling by nick-translation in conjunction with DNase I; Second-strand cDNA synthesis in conjunction with RNase H; Filling-in of 5′-overhangs
Description: OPTIZYME™ DNA Polymerase I, a template-dependent DNA polymerase, catalyzes 5′>3′ synthesis of DNA. The enzyme also exhibits 3′>5′ exonuclease (proofreading) activity, 5′>3′ exonuclease activity and ribonuclease H activity.
Supplied With: 10X OPTIZYME™ DNA Pol I Buffer (500mM Tris-HCl (pH 7.5 at 25°C), 100mM MgCl2, 10mM DTT).
Concentration: 10u/µℓ
Storage Buffer Components: 25 mM Tris-HCl (pH 7.5), 0.1 mM EDTA, 1 mM DTT and 50% (v/v) glycerol.
Unit Definition: One unit of the enzyme catalyzes the incorporation of 10 nmol of deoxyribonucleotides into a polynucleotide fraction (adsorbed on DE-81) in 30 min at 37°C, using poly(dA-dT)·poly(dA-dT) as a template·primer. Enzyme activity is assayed in the following mixture: 67 mM potassium phosphate (pH 7.4), 6.7 mM MgCl2, 1 mM 2-mercaptoethanol, 0.033 mM dATP, 0.033 mM dTTP, 0.4 MBq/mℓ -dTTP and 62.5 µg/mℓ poly(dA-dT) poly(dA-dT).
Tested for: Endodeoxyribonuclease-free
Recommended storage: -20°C

OPTIZYME™ DNase I, RNase-Free
Source: Recombinant E. Coli Strain

packaging	Mfr. No
1000 units Poly Tube	**BP8107-1**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: Preparation of DNA-free RNA; Removal of template DNA following in vitro transcription; Preparation of DNA-free RNA prior to RT-PCR and RT-qPCR; DNA labeling by nick-translation in conjunction with DNA Polymerase I; Studies of DNA-protein interactions by DNase footprinting.
Description: OPTIZYME™ DNase I, RNase-Free is an endonuclease that digests single- and double-stranded DNA. It hydrolyzes phosphodiester bonds producing mono- and oligodeoxyribonucleotides with phosphate and OH groups. The enzyme activity is strictly dependent on Ca2+ and is activated by Mg2+ or Mn2+ ions: (1) In the presence of Mg2+, DNase I cleaves each strand of dsDNA independently, in a statistically random fashion; (2) In the presence of Mn2+, the enzyme cleaves both DNA strands at approximately the same site, producing DNA fragments with blunt ends or with one or two nucleotide overhangs.
Supplied With: 10X OPTIZYME™ DNase I Buffer (100mM Tris-HCl (pH 7.5 at 25°C), 25mM MgCl2, 1mM CaCl2); 50mM OPTIZYME™ EDTA
Concentration: 1u/µℓ
Storage Buffer Components: 50 mM Tris-HCl (pH 7.5), 10 mM CaCl2 and 50% (v/v) glycerol.
Unit Definition: One unit of the enzyme completely degrades 1 µg of plasmid DNA in 10 min at 37°C. Enzyme activity is assayed in the following mixture: 10 mM Tris-HCl (pH 7.5 at 25°C), 2.5 mM MgCl2, 0.1 mM CaCl2, 1 µg of pUC19 DNA. One DNase I, RNase-Free unit is equivalent to 0.3 Kunitz unit.
Tested for: Ribonuclease-free; Functionally tested for the digestion of template DNA after in vitro transcription.
Recommended storage: -20°C

OPTIZYME™ Klenow Fragment
Source: Recombinant E. Coli Strain

packaging	Mfr. No
300 units Poly Tube	**BP8106-1**
1500 units Poly Tube	**BP8106-5**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: DNA blunting by fill-in of 5′-overhangs; Random-primed DNA labeling; Labeling by fill-in 5′-overhangs of dsDNA; DNA sequencing by the Sanger method; Site-specific mutagenesis of DNA with synthetic oligonucleotides; Second strand synthesis of cDNA.
Description: OPTIZYME™ Klenow Fragment is the large fragment of DNA Polymerase I (E.coli). It exhibits 5′>3′ polymerase activity and 3′> 5′ exonuclease (proofreading) activity, but lacks the 5′> 3′ exonuclease activity of DNA Polymerase I.
Supplied With: 10X OPTIZYME™ Klenow Fragment Buffer (500mM Tris-HCl (pH 8.0 at 25°C), 50mM MgCl2, 10mM DTT).
Concentration: 10u/µℓ
Storage Buffer Components: 25 mM Tris-HCl (pH 7.5), 0.1 mM EDTA, 1 mM DTT and 50% (v/v) glycerol.
Unit Definition: One unit of the enzyme catalyzes the incorporation of 10 nmol of deoxyribonucleotides into a polynucleotide fraction (adsorbed on DE-81) in 30 min at 37°C. Enzyme activity is assayed in the following mixture: 50 mM Tris-HCl (pH 8.0 at 25°C), 5 mM MgCl2, 1 mM DTT, 0.033 mM dNTP, 0.4 M Bq/mℓ -dTTP and 62.5 µg/mℓ activated salmon milt DNA.
Tested for: Endodeoxyribonuclease-free; Functionally tested for fill in of 5′-overhanging DNA termini and for random primed DNA labeling
Recommended storage: -20°C

OPTIZYME Exonuclease III
Source: Recombinant E. Coli Strain

packaging	Mfr. No
4000 units Poly Tube	**BP8108-1**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: Creation of unidirectional deletions in DNA fragments in conjunction with S1 Nuclease; Generation of a single-stranded template for dideoxy sequencing of DNA; Site-directed mutagenesis; Cloning of PCR products; Preparation of strand-specific probes.
Description: OPTIZYME™ Exonuclease III exhibits four different catalytic activities: (1) 3′>5′ exodeoxyribonuclease activity specific for double-stranded DNA. Exo III degrades dsDNA from blunt ends, 5′-overhangs or nicks, releasing 5′-mononucleotides from the 3′-ends of DNA strands and producing stretches of single stranded DNA. It is not active on 3′-overhang ends of DNA that are at least four bases long and do not carry a 3′-terminal C-residue (on single-stranded DNA, or on phosphorothioate-linked nucleotides); (2) 3′-phosphatase activity: Exo III removes the 3′-terminal phosphate and generates a 3′-OH group; (3) RNase H activity: Exo III exonucleolytically degrades the RNA strand in DNA-RNA hybrids; (4) Apurinic/apyrimidinic-endonuclease activity: Exo III cleaves phosphodiester bonds at apurinic or apyrimidinic sites to produce 5′-termini that are base free deoxyribose 5′-phosphate residues.
Supplied With: 10X OPTIZYME™ ExoIII Buffer (660mM Tris-HCl (pH 8.0 at 30°C), 6.6 mM MgCl2).
Concentration: 200u/µℓ
Storage Buffer Components: 50 mM Tris-HCl (pH 8.0), 50 mM KCl, 1 mM DTT and 50% (v/v) glycerol.
Unit Definition: One unit of the enzyme catalyzes the release of 1 nmol of acid soluble reaction products from E.coli -DNA in 30 min at 37°C. Enzyme activity is assayed in the following mixture: 50 mM Tris-HCl (pH 8.0), 5 mM MgCl2, 1 mM DTT and 0.05 mM sonicated E.coli -DNA.
Tested for: Endodeoxyribonuclease-free; Functionally tested for the creation of unidirectional deletions in DNA fragments.
Recommended storage: -20°C

OPTIZYME™ M-MLV Reverse Transcriptase
Source: Recombinant E. Coli Strain

packaging	Mfr. No
5000 units Poly Tube	**BP8104-1**
25000 units Poly Tube	**BP8104-5**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: First strand cDNA synthesis for RT-PCR and real-time RT-PCR; Synthesis of cDNA for cloning and expression; Generation of labeled cDNA probes for microarrays; DNA labeling; Analysis of RNA by primer extension.
Description: OPTIZYME™ M-MLV Reverse Transcriptase possesses RNA-dependent and DNA-dependent polymerase activity and RNase H activity specific to RNA in RNA-DNA hybrids, which is significantly lower than that of Avian Myeloblastis Virus (AMV) reverse transcriptase. M-MLV RT activity is optimal at 42°C (active up to 50°C). The enzyme is capable of both first strand cDNA synthesis (<=13 kb) and incorporation of modified nucleotides.
Supplied With: 5X OPTIZYME™ M-MLV RT Buffer (250mM Tris-HCl (pH 8.3 at 25°C), 250mM KCl, 20mM MgCl2, 50mM DTT).
Concentration: 200 u/µℓ
Storage Buffer Components: 50 mM Tris-HCl (pH 7.5), 0.1 M NaCl, 1 mM EDTA, 5 mM DTT, 0.1% (v/v) Triton X-100 and 50% (v/v) glycerol.
Unit Definition: One unit of the enzyme incorporates 1 nmol of dTMP into a polynucleotide fraction (adsorbed on DE-81) in 10 min at 37°C. Enzyme activity is assayed in the following mixture: 50 mM Tris-HCl (pH 8.3), 4 mM MgCl2, 10 mM DTT, 50 mM KCl, 0.5 mM dTTP, 0.4 MBq/mℓ -dTTP, 0.4 mM polyA·oligo (dT)12-18.
Tested for: Endo-, exodeoxyribonuclease, phosphatase and ribonuclease-free; Functionally tested in first strand cDNA and RT-PCR.
Recommended storage: -20°C

rDNase I (RNase-free)
Source: Recombinant E. Coli Stain — OPTIZYME™

packaging	Mfr. No
1000 units PolyTube	**BP3226-1**
2000 units PolyTube	**BP3226-2**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: Robust ability to remove genomic and template DNA from RNA preparations; meets or exceeds the performance of native bovine DNase I. Developed by recombinant methods; non-animal source (yeast) eliminates potential RNase contamination-safest choice to address environmental concerns.
Certified RNase free. Highly purified for excellent lot-to-lot consistency and optimal performance. Can even be used in
the characterization of DNA:Protein interactions.
Ideal for use in RT-PCR, cDNA synthesis, and in vitro RNA transcription.
Description: Recombinant DNase I (rDNase I) efficiently hydrolyzes phosphodiester linkages of double- or single-stranded DNA. Requires magnesium and calcium for maximum activity.
Concentration: 2 units/µℓ
Storage Buffer Components: 20mM HEPES (pH 7.5), 10mM CaCl2, 10mM MgCl2, 1mM DTT, 50% (v/v) Glycerol.
Provided with 10X Reaction Buffer: 100mM Tris-HCl (pH 7.5), 25mM MgCl2, 5mM CaCl2.
Unit Definition: One unit is defined as the amount of enzyme required to completely degrade 1µg DNA in 10 minutes at 37°C.
Recommended Storage: -20°C

OPTIZYME™ recombinant DNase I
10X Reaction Buffer

packaging	Mfr. No
1 mℓ PolyTube	**BP3227-1**

Applications: Provides optimal pH and ionic conditions for use with Optizyme rDNase I.
10X Reaction Buffer Components:100mM Tris-HCl (pH 7.5), 25mM MgCl2, 5mM CaCl2.
Recommended Storage: -20°C

Ribonuclease Inhibitor
Source: Recombinant — OPTIZYME ™

packaging	Mfr. No
2500 units PolyTube	**BP3222-1**
10000 units PolyTube	**BP3222-5**

Tested for DNase and Nickase contamination, absence of RNase activity, and specific performance tests

Applications: Recombinant Ribonuclease Inhibitor displays a broad spectrum of inhibitory activity against RNases, and does not have activity against other polymerases and reverse transcriptases. Suitable for use in common molecular biology applications such as isolation and purification of RNA, cDNA synthesis, RT-PCR, in vitro RNA transcription/translation, ribonuclease protection assay, and preparation of RNase-free antibodies.
Description: Supplied as a recombinant product from E. coli (originally isolated from rat lung) and provides superior protection of RNA from degradation by RNases. This RNase inhibitor is commonly added to all solutions used during the isolation of RNA, and will not interfere with the performance of most enzymes in downstream applications. Active over a broad temperature range, and even provides some RNase inhibition at 60°C which is useful when performing reverse transcription reactions at elevated temperatures to overcome secondary structure in RNA.
Storage Buffer Components: 20mM HEPES-KOH (pH 7.6 at 4°C), 50 mM KCl, 8 mM DTT, and 50% glycerol (v/v).
Note: Inactivates RNase A, RNase B, and RNase T2. No activity against SP6, T7, or T3 RNA polymerases, AMV or MMLV reverse transcriptases, and Taq DNA polymerase.
Unit Activity: Defined as the amount of inhibitor required to inhibit 50% of the activity of 5ng of RNase A.
Recommended Storage: -20°C

OPTIZYME™ SP6 RNA Polymerase
Source: Recombinant E. Coli Strain

packaging	Mfr. No
2000 units Poly Tube	**BP8100-1**
10000 units Poly Tube	**BP8100-5**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: Synthesis of unlabeled & labeled RNA that can be used: (1) for hybridization and for in vitro RNA translation, (2) as RNA or siRNA, (3) as a substrate in RNase protection assays or as template for genomic DNA sequencing and (4) in studies of RNA secondary structure and RNA-protein interactions.
Description: OPTIZYME™ SP6 RNA Polymerase is a DNA-dependent RNA polymerase with strict specificity for its respective double-stranded promoter. The enzyme catalyzes the 5'->3' synthesis of RNA on either single-stranded DNA or double-stranded DNA downstream from the SP6 promoter. SP6 RNA Polymerase accepts modified nucleotides (e.g., biotin-, digoxigenin-, fluorescein-labeled nucleotides) as substrates for RNA synthesis.
Supplied With: 5X OPTIZYME™ Transcription Buffer (200mM Tris-HCl (pH 7.9 at 25°C), 30mM MgCl2, 50mM DTT, 50mM NaCl, 10mM spermidine).
Concentration: 20u/µℓ
Storage Buffer Components: 50 mM Tris-HCl (pH 8.0), 150 mM NaCl, 5 mM DTT, 0.1 mg/mℓ BSA, 0.03% (v/v) ELUGENT Detergent and 50% (v/v) glycerol.
Unit Definition: One unit of the enzyme incorporates 1 nmol of AMP into a polynucleotide fraction (adsorbed on DE-81) in 60 minutes at 37°C. Enzyme activity is assayed in the following mixture: 40 mM Tris-HCl (pH 8.0), 6 mM MgCl2, 10 mM DTT,2 mM spermidine, 0.5 mM of each NTP, 0.6 MBq/mℓ -ATP, 20 µg/mℓ plasmid DNA containing the SP6 promoter sequences.
Tested for: Endo-, exodeoxyribonuclease and ribonuclease-free; Functionally tested in in vitro transcription reaction.
Recommended storage: -20°C

OPTIZYME™ T3 RNA Polymerase
Source: Recombinant E. Coli Strain

packaging	Mfr. No
1000 units Poly Tube	**BP8101-1**
5000 units Poly Tube	**BP8101-5**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: Synthesis of unlabeled & labeled RNA that can be used: (1) for hybridization and for in vitro RNA translation, (2) as RNA or siRNA, (3) as a substrate in RNase protection assays or as template for genomic DNA sequencing and (4) in studies of RNA secondary structure and RNA-protein interactions.
Description: OPTIZYME™ T3 RNA Polymerase is a DNA-dependent RNA polymerase with strict specificity for its respective double-stranded promoter. The enzyme catalyzes the 5'->3' synthesis of RNA on either single-stranded DNA or double-stranded DNA downstream from the T3 promoter. Bacteriophage T3 RNA Polymerase accepts modified nucleotides (e.g. biotin-, digoxigenin-, fluorescein-labeled nucleotides) as substrates for RNA synthesis.
Supplied With: 5X OPTIZYME™ Transcription Buffer (200mM Tris-HCl (pH 7.9 at 25°C), 30mM MgCl2, 50mM DTT, 50mM NaCl, 10mM spermidine).
Concentration: 20u/µℓ
Storage Buffer Components: 50 mM Tris-HCl (pH 8.0), 150 mM NaCl, 5 mM DTT, 0.1 mg/mℓ BSA, 0.03% (v/v) ELUGENT Detergent and 50% (v/v) glycerol.
Unit Definition: One unit of the enzyme incorporates 1 nmol of AMP into a polynucleotide fraction (adsorbed on DE-81) in 60 minutes at 37°C. Enzyme activity is assayed in the following mixture: 40 mM Tris-HCl (pH 8.0), 6 mM MgCl2, 10 mM DTT, 2 mM spermidine, 0.5 mM of each NTP, 0.6 MBq/mℓ -ATP, 20 µg/mℓ plasmid DNA containing the T3 promoter sequence.
Tested for: Endo-, exodeoxyribonuclease and ribonuclease-free; Functionally tested in in vitro transcription reaction.
Recommended storage: -20°C

OPTIZYME™ T4 DNA Ligase
Source: Recombinant E. Coli Strain

packaging	Mfr. No
100 units Poly Tube	**BP8099-1**
1500 units Poly Tube	**BP8099-15**
500 units Poly Tube	**BP8099-5**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: Molecular cloning; Joining of double-stranded oligonucleotide linkers or adaptors to DNA; Site-directed mutagenesis; Amplified fragment length polymorphism (AFLP); Ligase-mediated RNA detection; Nick repair in duplex DNA, RNA or DNA/RNA hybrids.
Description: OPTIZYME™ T4 DNA Ligase catalyzes the formation of a phosphodiester bond between juxtaposed 5'-phosphate and 3'-hydroxyl termini in duplex DNA or RNA. The enzyme repairs single-strand nicks in duplex DNA, RNA or DNA/RNA hybrids and joins DNA fragments with either cohesive or blunt termini. The T4 DNA Ligase requires ATP as a cofactor.
Supplied With: 10X OPTIZYME™ T4 DNA Ligase Buffer (400mM Tris-HCl, 100mM MgCl2, 100mM DTT, 5mM ATP (pH 7.8 at 25°C); 50% OPTIZYME™ PEG 4000 Solution (50% (w/v) polyethylene glycol).
Concentration: 5u/µℓ
Storage Buffer Components: 20 mM Tris-HCl (pH 7.5), 50 mM KCl, 1 mM DTT, 0.1 mM EDTA and 50% (v/v) glycerol.
Unit Definition: One Weiss unit of the enzyme catalyzes the conversion of 1 nmol of into Norit-adsorbable form in 20 min at 37°C. One Weiss unit is equivalent to approximately 200 cohesive end ligation units (CEU)*. Enzyme activity is assayed in the following mixture: 66 mM Tris-HCl (pH 7.6), 6.6 mM MgCl2, 0.066 mM ATP, 10 mM DTT, 3.3 µM . (*One CEU is defined as the amount of enzyme required to give 50% ligation of HindIII fragments of lambda DNA in 30 min at 16°C).
Tested for: Endo-, exodeoxyribonuclease, phosphatase and ribonuclease-free; Functionally tested for ligation of cohesive and blunt end DNA fragments.
Recommended storage: -20°C

OPTIZYME™ T4 DNA Polymerase
Source: Recombinant E. Coli Strain

packaging	Mfr. No
100 units Poly Tube	**BP8105-1**
500 units Poly Tube	**BP8105-5**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: Blunting of DNA ends: fill-in 5'-overhangs and/or removal of 3'-overhangs; Blunting of PCR products with 3'-dA overhangs; Synthesis of labeled DNA probes by the replacement reaction; Oligonucleotide-directed site-specific mutagenesis; Ligation-independent cloning of PCR products.
Description: OPTIZYME™ T4 DNA Polymerase is a template -dependent DNA polymerase which catalyzes 5'->3' synthesis from primed single-stranded DNA. The enzyme possesses 3'->5' exonuclease activity, but lacks 5'->3' exonuclease activity.
Supplied With: 5X OPTIZYME™ T4 DNA Pol Buffer (335mM Tris-HCl (pH 8.8 at 25°C), 33mM MgCl2, 5mM DTT, 84mM (NH4)2SO4)
Concentration: 5 u/µℓ
Storage Buffer Components: 20 mM potassium phosphate (pH 7.5), 200 mM KCl, 2 mM DTT and 50% (v/v) glycerol.
Unit Definition: One unit of the enzyme catalyzes the incorporation of 10 nmol of deoxyribonucleotides into a polynucleotide fraction (adsorbed on DE-81) in 30 min at 37°C. Enzyme activity is assayed in the following mixture: 67 mM Tris-HCl (pH 8.8), 6.7 mM MgCl2, 1 mM DTT, 16.7 mM (NH4)2SO4, 0.2 mg/mℓ BSA, 0.033 mM of each dNTP, 0.4 MBq/mℓ -dTTP and 0.2 mM heat-denatured and nuclease-digested calf thymus DNA.
Tested for: Endodeoxyribonuclease-free
Recommended storage: -20°C

OPTIZYME™ T4 Polynucleotide Kinase
Source: Recombinant E. Coli Strain

packaging	Mfr. No
500 units Poly Tube	**BP8098-1**
2500 units Poly Tube	**BP8098-5**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: Labeling 5'-termini of nucleic acids to be used as: probes for hybridization, probes for transcript mapping markers for gel-electrophoresis primers for DNA sequencing, and primers for PCR; 5'-phosphorylation of oligonucleotides, PCR products, and other DNA or RNA prior to ligation; Phosphorylation of PCR primers; Detection of DNA modification by the post-labeling assay; Removal of 3'-phosphate groups.
Description: OPTIZYME™ T4 PNK catalyzes the transfer of the Upsilon gamma-phosphate from ATP to the 5'-OH group of single- and double-stranded DNAs and RNAs, oligonucleotides or nucleoside 3'-monophosphates (forward reaction). The reaction is reversible. In the presence of ADP, T4 PNK exhibits 5'-phosphatase activity and catalyzes the exchange of phosphate groups between 5'-P-oligo-/polynucleotides and ATP (exchange reaction). The enzyme is also a 3'-phosphatase.
Supplied With: 10X OPTIZYME T4 PNK Buffer 1 (500 mM Tris-HCl (pH 7.6 at 25°C), 100 mM MgCl2, 50 mM DTT, 1 mM spermidine); 10X OPTIZYME T4 PNK Buffer 2 (2500 mM imidazole-HCl (pH 6.4 at 25°C), 180 mM MgCl2, 50 mM DTT, 1 mM spermidine and 1 mM ADP); 24% PEG 6000 Sol for T4 PNK (24% (w/v) polyethylene glycol 6000)
Concentration: 10 u/µℓ
Storage Buffer Components: 20 mM Tris-HCl (pH 7.5), 25 mM KCl, 0.1 mM EDTA, 2 mM DTT and 50% (v/v) glycerol.
Unit Definition: One unit of the enzyme transfers 1 nmol of g-phosphate from ATP to 5'-OH DNA in 30 min at 37°C. Enzyme activity is assayed in the following mixture: 100 mM Tris-HCl (pH 8.0), 10 mM MgCl2, 5 mM DTT, 0.5 mM 5'-OH DNA, 0.05 mM ATP and 0.1 MBq/mℓ [g -33P]-ATP.
Tested for: Endo-, exodeoxyribonuclease and ribonuclease-free; Functionally tested for labeling of 5'-termini of DNA.
Recommended storage: -20°C

OPTIZYME™ T7 RNA Polymerase
Source: Recombinant E. Coli Strain

packaging	Mfr. No
5000 units Poly Tube	**BP8102-1**
25000 units Poly Tube	**BP8102-5**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: Synthesis of unlabeled & labeled RNA that can be used: (1) for hybridization and for in vitro RNA translation, (2) as RNA or siRNA, (3) as a substrate in RNase protection assays or as template for genomic DNA sequencing and (4) in studies of RNA secondary structure and RNA-protein interactions.
Description: OPTIZYME™ T7 RNA Polymerase is a DNA dependent RNA polymerase with strict specificity for its respective double-stranded promoter. The enzyme catalyzes the 5 -> 3' synthesis of RNA on either single-stranded DNA or double-stranded DNA downstream from the T7 promoter. Bacteriophage T7 RNA Polymerase accepts modified nucleotides (e.g., biotin-, digoxigenin-, fluorescein-labeled nucleotides) as substrates for RNA synthesis.
Supplied With: 5X OPTIZYME™ Transcription Buffer (200mM Tris-HCl (pH 7.9 at 25°C), 30mM MgCl2, 50mM DTT, 50mM NaCl, 10mM spermidine).
Concentration: 20 u/µℓ
Storage Buffer Components: 50 mM Tris-HCl (pH 8.0), 150 mM NaCl, 5 mM DTT, 0.1 mg/mℓ BSA, 0.03% (v/v) ELUGENT Detergent and 50% (v/v) glycerol.
Unit Definition: One unit of the enzyme incorporates 1 nmol of AMP into a polynucleotide fraction (adsorbed on DE-81) in 60 minutes at 37°C. Enzyme activity is assayed in the following mixture: 40 mM Tris-HCl (pH 8.0), 6 mM MgCl2, 10 mM DTT, 2 mM spermidine, 0.5 mM of each NTP, 0.6 MBq/mℓ -ATP, 20 µg/mℓ plasmid DNA containing the T7 promoter sequence.
Recommended storage: -20°C

OPTIZYME™ Terminal Deoxynucleotidyl Transferase
Source: Recombinant E. Coli Strain

packaging	Mfr. No
300 units Poly Tube	**BP8103-1**
1500 units Poly Tube	**BP8103-5**

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: Production of synthetic homo- and heteropolymers; Homopolymeric tailing of linear duplex DNA with any type of 3'-OH terminus; Oligodeoxyribonucleotide and DNA labeling; 5'-RACE (Rapid Amplification of cDNA Ends); In situ localization of apoptosis.
Description: OPTIZYME™ TdT, a template-independent DNA polymerase, catalyzes the repetitive addition of deoxyribonucleotides to the 3'-OH of oligodeoxyribonucleotides and single-stranded, or double-stranded DNA. TdT requires an oligonucleotide of at least three nucleotides to serve as a primer. With RNA as template, TdT shows variable performance which strongly depends upon the tertiary structure of acceptor RNA 3'-end and the nature of nucleotide. Generally, it is lower than using DNA as a template.
Supplied With: 5X OPTIZYME™ TdT Buffer (1M potassium cacodylate, 125mM Tris, 0.05% (v/v) Triton X-100, 5mM CoCl2 (pH 7.2 at 25°C))
Concentration: 20 u/µℓ
Storage Buffer Components: 100 mM potassium acetate (pH 6.8), 2 mM 2 -mercaptoethanol, 0.01% (v/v) Triton X-100 and 50% (v/v) glycerol.
Unit Definition: One unit of the enzyme catalyzes the incorporation of 1 nmol of deoxythymidylate into a polynucleotide fraction (adsorbed on DE-81) in 60 min at 37°C. Enzyme activity is assayed in the following mixture: 200 mM potassium cacodylate (pH 7.2), 1 mM CoCl2, 0.01% (v/v) Triton X 100, 10 µM oligo(dT)10, 1 mM dTTP and 0.4 MBq/mℓ -dTTP.
Tested for: Endo-, exodeoxyribonuclease, phosphatase and ribonuclease-free
Recommended storage: -20°C

Ribonuclease H

packaging	Mfr. No
50 units PolyTube	**BP3215-1**

CAS: 9050-76-4
H315, H319, H335
P280, P305+P351+P338

Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: Ribonuclease H is used in removal of the RNA strand prior to second strand cDNA synthesis and analysis of in vitro polyadenylation reaction products.
Description: Ribonuclease H (RNase H) from E. coli is an endoribonuclease that specifically hydrolyzes the phosphodiester bonds of RNA hybridized to DNA to produce 3'-OH and 5'-P terminated products. It will not degrade single-stranded nucleic acids, duplex DNA or double-stranded RNA.
Concentration: 0.5-2u/µℓ
Storage Buffer Components: 20mm HEPES-KOH (pH 7.8), 1mM DTT, 50mM KCl and 50% (v/v) glycerol, and 0.2mg/mℓ BSA.
Unit Definition: One unit is defined as the amount of enzyme required to produce 1nmol acid-soluble ribonucleotides from radiolabeled poly(rA):poly(dT) in 20 minutes at 37°C in 20mM HEPES-KOH (pH 7.8), 50mM KCl, 10mM MgCl2, 1mM DTT, 20µM radiolabeled poly(rA):poly(dT).
Recommended Storage: -20°C

OPTIZYME™ AarI
Source: E. coli

packaging	Mfr. No
125 units Poly Tube	**BP8069-1**

Buffer 1 ..... No Reaction%
Buffer 2 ..... No Reaction%
Buffer 3 ..... 0-20%
Buffer 4 ..... No Reaction%
Buffer 5 ..... 0-20%
Buffer AarI, ScaI, PasI 100%
Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: OPTIZYME™ AarI digests dsDNA with the recognition sequence indicated below.
Conditions for 100% Activity: 1X OPTIZYME Buffer AarI, ScaI, PasI: 10mM Bis-Tris Propane-HCl (pH 6.5 at 37°C), 10mM MgCl2, 100mM KCl, 0.1mg/mℓ BSA; 0.5µM of oligonucleotide; Incubate at 37°C.
Recognition Sequence: 5'...C A C C T G C (N)4 ^...3'
Supplied With: 10X OPTIZYME Buffer AarI, ScaI, PasI and 50X Oligonucleotide
Concentration: 2u/µℓ
Storage Buffer Components: 10mM potassium phosphate (pH 7.4 at 25°C), 100mM KCl, 1mM EDTA, 1mM DTT, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of AarI at which no change in the fragmentation pattern is observed with further increase of enzyme. 1 µg of lambda DNA is incubated with the enzyme for 1 hour at 37°C in 50 µℓ of recommended reaction buffer. The cleavage of DNA by AarI is never complete.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ AatII
Source: E. coli

packaging	Mfr. No
300 units Poly Tube	**BP8041-1**

Buffer 1 ..... 50-100%
Buffer 2 ..... 20-50%
Buffer 3 ..... 0-20%
Buffer 4 ..... 100%
Buffer 5 ..... 0-20%

Applications: OPTIZYME™ AatII digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G A C G T^C...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/ mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of AatII required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ AluI
Source: Arthrobacter luteus

packaging	Mfr. No
600 units Poly Tube	**BP8015-1**

Buffer 1 ..... 50-100%
Buffer 2 ..... 0-20%
Buffer 3 ..... 0-20%
Buffer 4 ..... 100%
Buffer 5 ..... 0-20%
Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: OPTIZYME™ AluI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...A G^C T...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 50mM KCl, 1 mM DTT, 0.1mM EDTA, 0.15% Triton X-100, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of AluI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ AloI
Source: E. coli

packaging	Mfr. No
100 units Poly Tube	**BP8075-1**

Buffer 1 ..... 0-20%
Buffer 2 ..... 0-20%
Buffer 3 ..... 0-20%
Buffer 4 ..... 20-50%
Buffer 5 ..... 100%
Tested for ..... RNase activity, protease activity, and specific performance tests.

Applications: OPTIZYME™ AloI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...^ 7(N) G A A C (N)6 T C C (N)12-13^...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2, 100mM KCl and 0.1mg/mℓ BSA; Incubate at 30°C.
Concentration: 1-3u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of AloI required to digest 1 µg of lambda DNA in 1 hour at 30°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified
Recommended storage: -20°C

OPTIZYME™ Alw44I
Source: Acinetobacter lwoffi RFL44

packaging	Mfr. No
1000 units Poly Tube	**BP8059-1**

Buffer 1 ..... 50-100%
Buffer 2 ..... 100%
Buffer 3 ..... 0-20%
Buffer 4 ..... 100%
Buffer 5 ..... 50-100%

Applications: OPTIZYME™ Alw44I digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G^T G C A C...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/ mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 50mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of Alw44I required to digest 1 µg of lambda DNA-SmaI fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ ApaI
Source: E. coli

packaging	Mfr. No
5000 units Poly Tube	**BP8025-1**

Buffer 1	100%
Buffer 2	20-50%
Buffer 3	0-20%
Buffer 4	20-50%
Buffer 5	0-20%

Applications: OPTIZYME™ ApaI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G G G C C^C...3'
Supplied With: 10X OPTIZYME Buffer 1
Conditions for 100% Activity: 1X OPTIZYME Buffer 1: 10mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2 and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 50mM NaCl, 1 mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of ApaI required to digest 1 µg of lambda DNA-CpoI fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ AvaI
Source: E. coli

packaging	Mfr. No
1000 units Poly Tube	**BP8035-1**

Buffer 1	100%
Buffer 2	50-100%
Buffer 3	0-20%
Buffer 4	100%
Buffer 5	0-20%

Applications: OPTIZYME™ AvaI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C^Y C G R G...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of AvaI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ AvaII
Source: E. coli

packaging	Mfr. No
800 units Poly Tube	**BP8043-1**

Buffer 1	0-20%
Buffer 2	50-100%
Buffer 3	50-100%
Buffer 4	50-100%
Buffer 5	100%

Applications: OPTIZYME™ AvaII digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G^G W C C...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2, 100mM KCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of AvaII required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ BalI
Source: Micrococcus luteus Ng 16-122

packaging	Mfr. No
200 units Poly Tube	**BP8039-1**

Buffer 1	0-20%
Buffer 2	20-50%
Buffer 3	0-20%
Buffer 4	20-50%
Buffer 5	100%

Applications: OPTIZYME™ BalI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...T G G^C C A...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2, 100mM KCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 5u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of BalI required to digest 1 µg of lambda DNA dcm- in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ BamHI
Source: E. coli

packaging	Mfr. No
12500 units Poly Tube	**BP8005-5**

Buffer 1	20-50%
Buffer 2	100%
Buffer 3	20-50%
Buffer 4	100%
Buffer 5	50-100%
Buffer BamHI	100%

Applications: OPTIZYME™ BamHI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G^G A T C C...3'
Supplied With: 10X OPTIZYME BamHI Buffer
Conditions for 100% Activity: 1X OPTIZYME Buffer BamHI: 10mM Tris-HCl (pH 8.0 at 37°C), 5mM MgCl2, 100mM KCl, 0.02% Triton X-100 and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 200mM NaCl, 1mM DTT, 0.1mM EDTA, 0.15% Triton X-100, 0.2mg/mℓ BSA and 50% (v/v) glycerol.
Unit Definition: One unit is defined as the amount of BamHI required to digest 1 µg of lambda DNA-Bsp120I fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ BclI
Source: Bacillus caldolyticus

packaging	Mfr. No
3000 units Poly Tube	**BP8053-1**

Buffer 1	20-50%
Buffer 2	100%
Buffer 3	20-50%
Buffer 4	100%
Buffer 5	20-50%

Applications: OPTIZYME™ BclI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...T^G A T C A...3'
Supplied With: 10X OPTIZYME Buffer 2
Conditions for 100% Activity: 1X OPTIZYME Buffer 2: 10mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2, 50mM NaCl and 0.1mg/mℓ BSA; Incubate at 55°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of BclI required to digest 1 µg of lambda DNA dam- in 1 hour at 55°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified
Recommended storage: -20°C

OPTIZYME™ BglI
Bacillus globigii

packaging	Mfr. No
2000 units Poly Tube	**BP8046-1**

Buffer 1	0-20%
Buffer 2	50-100%
Buffer 3	100%
Buffer 4	0-20%
Buffer 5	100%

Applications: OPTIZYME™ BglI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G C C N N N N^N G G C...3'
Supplied With: 10X OPTIZYME Buffer 3
Conditions for 100% Activity: 1X OPTIZYME Buffer 3: 50mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2, 100mM NaCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 300mM NaCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of BglI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ BglII
Source: E. coli

packaging	Mfr. No
1000 units Poly Tube	**BP8014-1**
2500 units Poly Tube	**BP8014-5**

Buffer 1	0-20%
Buffer 2	20-50%
Buffer 3	100%
Buffer 4	0-20%
Buffer 5	50-100%

Applications: OPTIZYME™ BglII digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...A^G A T C T...3'
Supplied With: 10X OPTIZYME Buffer 3
Conditions for 100% Activity: 1X OPTIZYME Buffer 3: 50mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2, 100mM NaCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 8.2 at 25°C), 200 mM KCl, 1mM DTT, 0.1mM EDTA, 0.5mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of BglII required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ BpiI
Source: Bacillus pumillus Sw 4-3

packaging	Mfr. No
1000 units Poly Tube	**BP8072-1**

Buffer 1	20-50%
Buffer 2	100%
Buffer 3	50-100%
Buffer 4	50-100%
Buffer 5	50-100%

Applications: OPTIZYME™ BpiI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G A A G A C (N)2^...3'
Supplied With: 10X OPTIZYME Buffer 2
Conditions for 100% Activity: 1X OPTIZYME Buffer 2: 10mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2, 50mM NaCl and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of BpiI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ BshTI
Source: Bacillus sphaericus Jo 22-024

packaging	Mfr. No
1000 units Poly Tube	**BP8078-1**

Buffer 1	0-20%
Buffer 2	20-50%
Buffer 3	100%
Buffer 4	20-50%
Buffer 5	50-100%

Applications: OPTIZYME™ BshTI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...A^C C G G T...3'
Supplied With: 10X OPTIZYME Buffer 3
Conditions for 100% Activity: 1X OPTIZYME Buffer 3: 50mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2, 100mM NaCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of BshTI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ Bsh1236I
Source: Bacillus sphaericus RFL1236

packaging	Mfr. No
2500 units Poly Tube	**BP8071-1**

Buffer 1	0-20%
Buffer 2	0-20%
Buffer 3	50-100%
Buffer 4	20-50%
Buffer 5	100%

Applications: OPTIZYME™ Bsh1236I digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C G^C G...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2, 100mM KCl and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 50mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of Bsh1236I required to digest 1 µg lambda DNA in 1 hour at 37°C in 50 µℓ of reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ BssHII
Source: Paracoccus alcaliphilus ZVK3-3

packaging	Mfr. No
200 units Poly Tube	**BP8036-1**

Buffer 1	0-20%
Buffer 2	0-20%
Buffer 3	100%
Buffer 4	0-20%
Buffer 5	100%

Applications: OPTIZYME™ BssHII digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G^C G C G C...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2, 100mM KCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 50mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of BssHII required to digest 1 µg lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ BstEII
Source: Escherichia coli RFL91

packaging	Mfr. No
2000 units Poly Tube	**BP8038-1**

Buffer 1	20-50%
Buffer 2	20-50%
Buffer 3	100%
Buffer 4	No Reaction%
Buffer 5	50-100%

Applications: OPTIZYME™ BstEII digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G^G T N A C C...3'
Supplied With: 10X OPTIZYME Buffer 3
Conditions for 100% Activity: 1X OPTIZYME Buffer 3: 50mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl)2 , 100mM NaCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of BstEII required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ Cfr9I
Source: E. coli

packaging	Mfr. No
1500 units Poly Tube	**BP8081-1**

Buffer 1	0-20%
Buffer 2	0-20%
Buffer 3	0-20%
Buffer 4	20-50%
Buffer 5	0-20%
Buffer Cfr9I	100%

Applications: OPTIZYME™ Cfr9I digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C^C C G G G...3'
Supplied With: 10X OPTIZYME Cfr9I
Conditions for 100% Activity: 1X OPTIZYME Buffer Cfr9I: 10mM Tris-HCl (pH 7.2 at 37°C), 5mM MgCl2, 200mM sodium glutamate and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 250mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of Cfr9I required to digest 1 µg of lambda DNA-HindIII fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer (containing 2 µg DNA fragments).
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ ClaI
Source: Bacillus subtilis 15

packaging	Mfr. No
600 units Poly Tube	**BP8024-1**
2500 units Poly Tube	**BP8024-5**

Buffer 1	20-50%
Buffer 2	20-50%
Buffer 3	20-50%
Buffer 4	100%
Buffer 5	20-50%

Applications: OPTIZYME™ ClaI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...A T^C G A T...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 8.0 at 25°C), 50mM KCl, 1mM DTT, 0.1mM EDTA, 0.5mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of ClaI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ Csp6I
Source: Corynebacterium species RFL6

packaging	Mfr. No
1500 units Poly Tube	**BP8068-1**

Buffer 1	100%
Buffer 2	50-100%
Buffer 3	0-20%
Buffer 4	50-100%
Buffer 5	0-20%

Applications: OPTIZYME™ Csp6I digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G^T A C...3'
Supplied With: 10X OPTIZYME Buffer 1
Conditions for 100% Activity: 1X OPTIZYME Buffer 1: 10mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl)2 and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of Csp6I required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ DdeI
Source: E. coli

packaging	Mfr. No
500 units Poly Tube	**BP8060-1**
1000 units Poly Tube	**BP8060-5**

Buffer 1	20-50%
Buffer 2	20-50%
Buffer 3	20-50%
Buffer 4	100%
Buffer 5	20-50%

Applications: OPTIZYME™ DdeI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C^T N A G...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of DdeI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ DpnI
Source: E. coli

packaging	Mfr. No
500 units Poly Tube	**BP8009-1**

Buffer 1	100%
Buffer 2	100%
Buffer 3	50-100%
Buffer 4	100%
Buffer 5	50-100%

Applications: OPTIZYME™ DpnI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G m6A^T C...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 400mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of DpnI required to digest 1 µg of pBR322 DNA (dam methylated) in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ DraI
Source: Deinococcus radiophilus

packaging	Mfr. No
2000 units Poly Tube	**BP8026-1**

Buffer 1	50-100%
Buffer 2	50-100%
Buffer 3	20-50%
Buffer 4	100%
Buffer 5	20-50%

Applications: OPTIZYME™ DraI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...T T T^A A A...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 50mM KCl, 1mM DTT, 0.1mM EDTA, 0.15% Triton X-100, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of DraI required to digest 1 µg lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ Ecl136II
Source: Enterobacter cloacae RFL136

packaging	Mfr. No
1500 units Poly Tube	**BP8080-1**

Buffer 1	50-100%
Buffer 2	20-50%
Buffer 3	0-20%
Buffer 4	50-100%
Buffer 5	0-20%
Buffer Ecl136II, SacI	100%

Applications: OPTIZYME™ Ecl136II digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G A G^C T C...3'
Supplied With: 10X OPTIZYME Ecl136II, SacI
Conditions for 100% Activity: 1X Buffer Ecl136II, SacI: 10mM Bis-Tris Propane-HCl (pH 6.5 at 37°C), 10mM MgCl2 and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of Ecl136II required to digest 1 µg of lambda DNA-HindIII in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ Eco57I
Source: E. coli

packaging	Mfr. No
1000 units Poly Tube	**BP8066-1**

Buffer 1	100%
Buffer 2	100%
Buffer 3	20-50%
Buffer 4	50-100%
Buffer 5	20-50%

Applications: OPTIZYME™ Eco57I digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C T G A A G (N)16^...3'
Supplied With: 10X OPTIZYME Buffer 2 and 50X S-adenosylmethionine.
Conditions for 100% Activity: 1X OPTIZYME Buffer 2: 10mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2 , 50mM NaCl and 0.1mg/mℓ BSA; 0.01mM S-adenosylmethionine; Incubate at 37°C
Concentration: 5u/µℓ
Storage Buffer Components: 10mM potassium phosphate (pH 7.4 at 25°C), 100mM NaCl, 1mM EDTA, 1mM DTT and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of Eco57I at which no change in the fragmentation pattern is observed with further increase of enzyme. 1 µg of lambda DNA is incubated with Eco57I for 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ EcoRI
Source: E. coli

packaging	Mfr. No
15000 units Poly Tube	**BP8003-5**

Buffer 1	0-20%
Buffer 2	No Reaction%
Buffer 3	100%
Buffer 4	No Reaction%
Buffer 5	100%
Buffer EcoRI	100%

Applications: OPTIZYME™ EcoRI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G^A A T T C...3'
Supplied With: 10X OPTIZYME EcoRI Buffer
Conditions for 100% Activity: 1X OPTIZYME Buffer EcoRI: 50mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2, 100mM NaCl, 0.02% Triton X-100 and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM potassium phosphate (pH 7.4 at 25°C), 300mM NaCl, 1mM EDTA, 1mM DTT, 0.2mg/mℓ BSA, 0.15% Triton X-100 and 50% (v/v) glycerol.
Unit Definition: One unit is defined as the amount of EcoRI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ EcoRI
Source: E. coli

packaging	Mfr. No
25000 units Poly Tube	**BP8054-1**

Buffer 1	0-20%
Buffer 2	No Reaction%
Buffer 3	100%
Buffer 4	No Reaction%
Buffer 5	100%
Buffer EcoRI	100%

Applications: OPTIZYME™ EcoRI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G^A A T T C...3'
Supplied With: 10X OPTIZYME EcoRI Buffer
Conditions for 100% Activity: 1X OPTIZYME Buffer EcoRI: 50mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2, 100mM NaCl, 0.02% Triton X-100 and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 50u/µℓ
Storage Buffer Components: 10mM potassium phosphate (pH 7.4 at 25°C), 300mM NaCl, 1mM EDTA, 1mM DTT, 0.2mg/mℓ BSA, 0.15% Triton X-100 and 50% (v/v) glycerol.
Unit Definition: One unit is defined as the amount of EcoRI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ EcoRV
Source: Escherichia coli RFL32

packaging	Mfr. No
3000 units Poly Tube	**BP8012-1**

Buffer 1	0-20%
Buffer 2	50-100%
Buffer 3	50-100%
Buffer 4	20-50%
Buffer 5	100%

Applications: OPTIZYME™ EcoRV digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G A T^A T C...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2, 100mM KCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 25mM Tris-HCl (pH 7.5 at 25°C), 200mM NaCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of EcoRV required to digest 1 µg lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ Esp3I
Source: E. coli

packaging	Mfr. No
1000 units Poly Tube	**BP8070-1**

Buffer 1	100%
Buffer 2	20-50%
Buffer 3	0-20%
Buffer 4	100%
Buffer 5	0-20%

Applications: OPTIZYME™ Esp3I digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C G T C T C (N)1^...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4 + DTT: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; 1.0mM DTT; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM potassium phosphate (pH 7.4 at 25°C), 100mM KCl, 1mM EDTA, 7mM 2-mercaptoethanol, 0.5mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of Esp3I required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ HaeIII
Source: Bacillus subtilis R

packaging	Mfr. No
2500 units Poly Tube	**BP8002-1**
10000 units Poly Tube	**BP8002-5**

Buffer 1	0-20%
Buffer 2	0-20%
Buffer 3	0-20%
Buffer 4	50-100%
Buffer 5	100%

Applications: OPTIZYME™ HaeIII digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G G^C C...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2 , 100mM KCl and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 50mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol.
Unit Definition: One unit is defined as the amount of HaeIII required to digest 1 µg lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ HincII
Source: E. coli

packaging	Mfr. No
500 units Poly Tube	**BP8034-1**

Buffer 1	50-100%
Buffer 2	50-100%
Buffer 3	20-50%
Buffer 4	100%
Buffer 5	50-100%

Applications: OPTIZYME™ HincII digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G T Y^R A C...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 200mM KCl, 1mM DTT, 0.1mM EDTA, 0.5mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of HincII required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ HindIII
Source: Haemophilus influenzae Rd

packaging	Mfr. No
15000 units Poly Tube	**BP8006-5**

Buffer 1	0-20%
Buffer 2	20-50%
Buffer 3	0-20%
Buffer 4	50-100%
Buffer 5	100%

Applications: OPTIZYME™ HindIII digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...A^A G C T T...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2, 100mM KCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 250mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of HindIII required to digest 1 µg lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ HinFI
Source: Haemophilus influenzae Rf

packaging	Mfr. No
2000 units Poly Tube	**BP8051-1**

Buffer 1	0-20%
Buffer 2	20-50%
Buffer 3	50-100%
Buffer 4	50-100%
Buffer 5	100%

Applications: OPTIZYME™ HinFI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G^A N T C...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2, 100mM KCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of HinfI required to digest 1 µg lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ HpaI
Source: Kurthia species N88

packaging	Mfr. No
500 units Poly Tube	**BP8049-1**

Buffer 1	100%
Buffer 2	50-100%
Buffer 3	20-50%
Buffer 4	100%
Buffer 5	20-50%

Applications: OPTIZYME™ HpaI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G T T^A A C...3'
Supplied With: 10X OPTIZYME Buffer 1
Conditions for 100% Activity: 1X OPTIZYME Buffer 1: 10mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2 and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 50mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of HpaI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ HpaII
Source: Haemophilus parainfluenzae

packaging	Mfr. No
1000 units Poly Tube	**BP8032-1**

Buffer 1	50-100%
Buffer 2	50-100%
Buffer 3	0-20%
Buffer 4	100%
Buffer 5	20-50%

Applications: OPTIZYME™ HpaII digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C^C G G...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM NaCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of HpaII required to digest 1 µg lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ Hpy8I
Source: E. coli

packaging	Mfr. No
1000 units Poly Tube	**BP8079-1**

Buffer 1	50-100%
Buffer 2	50-100%
Buffer 3	0-20%
Buffer 4	100%
Buffer 5	20-50%

Applications: OPTIZYME™ Hpy8I digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G T N^N A C...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of Hpy8I required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ KpnI
Source: Klebsiella pneumoniae OK8

packaging	Mfr. No
4000 units Poly Tube	**BP8083-1**

Buffer 1	20-50%
Buffer 2	0-20%
Buffer 3	0-20%
Buffer 4	20-50%
Buffer 5	0-20%
Buffer KpnI	100%

Applications: OPTIZYME™ KpnI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G G T A C^C...3'
Supplied With: 10X OPTIZYME KpnI
Conditions for 100% Activity: 1X OPTIZYME Buffer KpnI: 10mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2, 0.02% Triton X-100 and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 50mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of KpnI required to digest 1 µg of lambda DNA-BamHI fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ LguI
Source: Lysobacter gummosus RFL1

packaging	Mfr. No
500 units Poly Tube	**BP8067-1**

Buffer 1	20-50%
Buffer 2	50-100%
Buffer 3	20-50%
Buffer 4	100%
Buffer 5	20-50%

Applications: OPTIZYME™ LguI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G C T C T T C (N)1^...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 5U/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of LguI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ MluI
Source: Micrococcus luteus

packaging	Mfr. No
1000 units Poly Tube	**BP8021-1**

Buffer 1	0-20%
Buffer 2	20-50%
Buffer 3	50-100%
Buffer 4	20-50%
Buffer 5	100%

Applications: OPTIZYME™ MluI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...A^C G C G T...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2, 100mM KCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 50mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of MluI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ MspI
Source: Moraxella species

packaging	Mfr. No
3000 units Poly Tube	**BP8048-1**

Buffer 1	50-100%
Buffer 2	50-100%
Buffer 3	0-20%
Buffer 4	100%
Buffer 5	0-20%

Applications: OPTIZYME™ MspI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C^C G G...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM potassium phosphate (pH 7.5 at 25°C), 200mM NaCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of MspI required to digest 1 µg lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ NaeI
Source: E. coli

packaging	Mfr. No
250 units Poly Tube	**BP8057-1**

Buffer 1	50-100%
Buffer 2	20-50%
Buffer 3	0-20%
Buffer 4	100%
Buffer 5	0-20%

Applications: OPTIZYME™ NaeI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G C C^G G C...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 500mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA, 0.15% Triton X-100 and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of NaeI required to digest 1 µg of pBR322 DNA-NdeI fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ NcoI
Source: E. coli

packaging	Mfr. No
500 units Poly Tube	**BP8017-1**
2500 units Poly Tube	**BP8017-5**

Buffer 1	20-50%
Buffer 2	20-50%
Buffer 3	20-50%
Buffer 4	100%
Buffer 5	50-100%

Applications: OPTIZYME™ NcoI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C^C A T G G...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 50mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of NcoI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ NdeI
Source: E. coli

packaging	Mfr. No
1500 units Poly Tube	**BP8020-1**

Buffer 1	0-20%
Buffer 2	0-20%
Buffer 3	100%
Buffer 4	0-20%
Buffer 5	50-100%

Applications: OPTIZYME™ NdeI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C A^T A T G...3'
Supplied With: 10X OPTIZYME Buffer 3
Conditions for 100% Activity: 1X OPTIZYME Buffer 3: 50mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2, 100mM NaCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of NdeI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ NheI
Source: Neisseria mucosa heidelbergensis

packaging	Mfr. No
500 units Poly Tube	**BP8019-1**

Buffer 1	100%
Buffer 2	20-50%
Buffer 3	0-20%
Buffer 4	100%
Buffer 5	0-20%

Applications: OPTIZYME™ NheI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G^C T A G C...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 8.0 at 25°C), 50mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of NheI required to digest 1 µg of lambda DNA-HindIII fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ NotI
Source: Nocardia otitidis-caviarum

packaging	Mfr. No
300 units Poly Tube	**BP8004-1**
1000 units Poly Tube	**BP8004-5**

Buffer 1	0-20%
Buffer 2	20-50%
Buffer 3	100%
Buffer 4	0-20%
Buffer 5	20-50%

Applications: OPTIZYME™ NotI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G C^G G C C G C...3'
Supplied With: 10X OPTIZYME Buffer 3
Conditions for 100% Activity: 1X OPTIZYME Buffer 3: 50mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2 , 100mM NaCl and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 20mM Tris-HCl (pH 7.8 at 25°C), 100mM NaCl, 0.1mM EDTA, 1mM DTT, 0.02% Triton X-100, 0.2mg/mℓ BSA and 50% (v/v) glycerol.
Unit Definition: One unit is defined as the amount of NotI required to digest 1 µg pTZ19RJL2 DNA-BseLI fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ PasI
Source: Pseudomonas anquilliseptica RFL1

packaging	Mfr. No
200 units Poly Tube	**BP8073-1**

Buffer 1	No Reaction%
Buffer 2	No Reaction%
Buffer 3	No Reaction%
Buffer 4	No Reaction%
Buffer 5	No Reaction%
Buffer AarI, ScaI, PasI	100%

Applications: OPTIZYME™ PasI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C C^C W G G G...3'
Supplied With: 10X OPTIZYME Buffer AarI, ScaI, PasI
Conditions for 100% Activity: 1X OPTIZYME Buffer AarI, ScaI, PasI: 10mM Bis-Tris Propane-HCl (pH 6.5 at 37°C), 10mM MgCl2 , 100mM KCl and 0.1mg/mℓ BSA; Incubate at 55°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of PasI required to digest 1 µg of lambda DNA-XagI fragments in 1 hour at 55°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ NsiI
Source: Moraxella phenylpyruvica RFL1103

packaging	Mfr. No
1000 units Poly Tube	**BP8058-1**

Buffer 1	0-20%
Buffer 2	50-100%
Buffer 3	20-50%
Buffer 4	50-100%
Buffer 5	100%

Applications: OPTIZYME™ NsiI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...A T G C A^T...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2, 100mM KCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 200mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of NsiI required to digest 1 µg lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified
Recommended storage: -20°C

OPTIZYME™ PfoI
Source: Pseudomonas fluorescens biovar 126

packaging	Mfr. No
200 units Poly Tube	**BP8077-1**

Buffer 1	0-20%
Buffer 2	20-50%
Buffer 3	50-100%
Buffer 4	100%
Buffer 5	0-20%

Applications: OPTIZYME™ PfoI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...T^C C N G G A...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of PfoI required to digest 1 µg of lambda DNA dam-, dcm- in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ PstI
Source: Providencia stuarti

packaging	Mfr. No
6000 units Poly Tube	**BP8001-1**

Buffer 1	50-100%
Buffer 2	50-100%
Buffer 3	100%
Buffer 4	50-100%
Buffer 5	100%

Applications: OPTIZYME™ PstI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C T G C A^G...3'
Supplied With: 10X OPTIZYME Buffer 3
Conditions for 100% Activity: 1X OPTIZYME Buffer 3: 50mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2 , 100mM NaCl and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 200mM NaCl, 1mM DTT, 0.1mM EDTA, 0.15% Triton X-100, 0.2mg/mℓ BSA and 50% (v/v) glycerol.
Unit Definition: One unit is defined as the amount of PstI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ PvuII
Source: Proteus vulgaris

packaging	Mfr. No
2500 units Poly Tube	**BP8022-1**
5000 units Poly Tube	**BP8022-5**

Buffer 1	50-100%
Buffer 2	100%
Buffer 3	20-50%
Buffer 4	20-50%
Buffer 5	50-100%
Tested for	RNase activity, protease activity, and specific performance tests.

Applications: OPTIZYME™ PvuII digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C A G^C T G...3'
Supplied With: 10X OPTIZYME Buffer 2
Conditions for 100% Activity: 1X OPTIZYME Buffer 2: 10mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2, 50mM NaCl and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10U/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of PvuII required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ PvuI
Source: E. coli

packaging	Mfr. No
300 units Poly Tube	**BP8050-1**

Buffer 1	0-20%
Buffer 2	20-50%
Buffer 3	50-100%
Buffer 4	50-100%
Buffer 5	100%

Applications: OPTIZYME™ PvuI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C G A T^C G...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2, 100mM KCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 300mM KCl, 0.1mM EDTA, 1mM DTT, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of PvuI required to digest 1 µg lambda DNA-CpoI fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ RsaI
Source: Rhodopseudomonas sphaeroides

packaging	Mfr. No
1000 units Poly Tube	**BP8000-1**

Buffer 1	50-100%
Buffer 2	20-50%
Buffer 3	0-20%
Buffer 4	100%
Buffer 5	0-20%

Applications: OPTIZYME™ RsaI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G T^A C...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10U/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of RsaI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ SacI
Source: Streptomyces achromoqenes

packaging	Mfr. No
2000 units Poly Tube	**BP8016-1**

Buffer 1	50-100%
Buffer 2	20-50%
Buffer 3	0-20%
Buffer 4	50-100%
Buffer 5	0-20%

Applications: OPTIZYME™ SacI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G A G C T^C...3'
Supplied With: 10X OPTIZYME Ecl136II, SacI Buffer
Conditions for 100% Activity: 1X OPTIZYME Buffer Ecl136II, SacI: 10mM Bis-Tris Propane-HCl (pH 6.5 at 37°C), 10mM MgCl2 and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1 mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of SacI required to digest 1 µg of lambda DNA-HindIII fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ SacII
Source: E. coli

packaging	Mfr. No
1200 units Poly Tube	**BP8023-1**

Buffer 1	100%
Buffer 2	50-100%
Buffer 3	0-20%
Buffer 4	50-100%
Buffer 5	0-20%

Applications: OPTIZYME™ SacII digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C C G C^G G...3'
Supplied With: 10X OPTIZYME Buffer 1
Conditions for 100% Activity: 1X OPTIZYME Buffer 1: 10mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2 and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM potassium phosphate (pH 7.4 at 25°C), 100mM NaCl, 1mM EDTA, 7mM 2-mercaptoethanol, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of SacII required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ SalI
Source: Streptomyces albus G

packaging	Mfr. No
2000 units Poly Tube	**BP8013-1**

Buffer 1	0-20%
Buffer 2	0-20%
Buffer 3	100%
Buffer 4	0-20%
Buffer 5	20-50%

Applications: OPTIZYME™ SalI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G^T C G A C...3'
Supplied With: 10X OPTIZYME Buffer 3
Conditions for 100% Activity: 1X OPTIZYME Buffer 3: 50mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2, 100mM NaCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C),100 mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of SalI required to digest 1 µg DNA-Eco81I fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ Sau3AI
Source: Bacillus species RFL143

packaging	Mfr. No
300 units Poly Tube	**BP8030-1**

Buffer 1	20-50%
Buffer 2	20-50%
Buffer 3	0-20%
Buffer 4	50-100%
Buffer 5	0-20%

Applications: OPTIZYME™ Sau3AI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...^G A T C ...3'
Supplied With: 10X OPTIZYME Buffer Sau3AI
Conditions for 100% Activity: 1X OPTIZYME Buffer Sau3AI: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate, 0.02% Triton X-100 and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 10mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of Sau3AI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ ScaI
Source: Streptomyces caespitosus

packaging	Mfr. No
1000 units Poly Tube	**BP8037-1**

Buffer 1	0-20%
Buffer 2	0-20%
Buffer 3	0-20%
Buffer 4	0-20%
Buffer 5	0-20%

Applications: OPTIZYME™ ScaI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...A G T^A C T...3'
Supplied With: 10X OPTIZYME AarI, ScaI, PasI Buffer
Conditions for 100% Activity: 1X OPTIZYME Buffer AarI, ScaI, PasI: 10mM Bis-Tris Propane-HCl (pH 6.5 at 37°C), 10mM MgCl2 , 100mM KCl and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 50mM KCl, 1mM DTT, 0.1mM EDTA, 0.5mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of ScaI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ SfaAI
Source: E. coli

packaging	Mfr. No
1000 units Poly Tube	**BP8076-1**

Buffer 1	50-100%
Buffer 2	0-20%
Buffer 3	0-20%
Buffer 4	100%
Buffer 5	0-20%

Applications: OPTIZYME™ SfaAI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G C G A T^C G C...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of SfaAI required to digest 1 µg of control DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer. The control DNA is linearized pJET1 DNA with inserted SfaAI recognition site.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ SmaI
Source: Serratia marcescens

packaging	Mfr. No
1200 units Poly Tube	**BP8011-1**
5000 units Poly Tube	**BP8011-5**

Buffer 1	50-100%
Buffer 2	0-20%
Buffer 3	0-20%
Buffer 4	100%
Buffer 5	0-20%

Applications: OPTIZYME™ SmaI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C C C^G G G...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol; Incubate at 30°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of SmaI required to digest 1 µg of lambda DNA-Eco81I fragments in 1 hour at 30°C in 50µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ SpeI
Source: Bacillus coagulans VS 29-022

packaging	Mfr. No
400 units Poly Tube	**BP8018-1**

Buffer 1	50-100%
Buffer 2	50-100%
Buffer 3	0-20%
Buffer 4	100%
Buffer 5	20-50%

Applications: OPTIZYME™ SpeI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...A^C T A G T...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 300mM KCl, 1mM DTT, 0.1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of SpeI required to digest 1 µg of control DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer. The control DNA is pUC19 DNA with inserted SpeI recognition site-Psp1406I fragments.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ SphI
Source: Pseudomonas aeruginosa

packaging	Mfr. No
500 units Poly Tube	BP8029-1

Buffer 1	100%
Buffer 2	50-100%
Buffer 3	0-20%
Buffer 4	50-100%
Buffer 5	0-20%

Applications: OPTIZYME™ SphI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G C A T G^C...3'
Supplied With: 10X OPTIZYME Buffer 1
Conditions for 100% Activity: 1X OPTIZYME Buffer 1: 10mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2 and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM potassium-phosphate (pH 7.0 at 25°C), 50mM KCl, 1mM DTT, 0.1mM EDTA, 0.15% Triton X-100, 0.5mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of SphI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ TaqI
Source: E. coli

packaging	Mfr. No
3000 units Poly Tube	BP8007-1

Buffer 1	0-20%
Buffer 2	20-50%
Buffer 3	20-50%
Buffer 4	20-50%
Buffer 5	20-50%
Buffer TaqI	100%

Applications: OPTIZYME™ TaqI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...T^C G A...3'
Supplied With: 10X OPTIZYME TaqI Buffer
Conditions for 100% Activity: 1X OPTIZYME Buffer TaqI: 10mM Tris-HCl (pH 8.0 at 37°C), 5mM MgCl2, 100mM NaCl and 0.1mg/mℓ BSA; Incubate at 65°C; To ensure higher efficiency digestion, perform the cleavage reaction under paraffin oil.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 300mM KCl, 1mM DTT, 0.1mM EDTA, 0.5mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of TaqI required to digest 1 µg of lambda DNA dam - in 1 hour at 65°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ StuI
Source: E. coli

packaging	Mfr. No
1000 units Poly Tube	BP8027-1

Buffer 1	100%
Buffer 2	50-100%
Buffer 3	20-50%
Buffer 4	50-100%
Buffer 5	20-50%

Applications: OPTIZYME™ StuI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...A G G^C C T...3'
Supplied With: 10X OPTIZYME Buffer 1
Conditions for 100% Activity: 1X OPTIZYME Buffer 1: 10mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2 and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of StuI required to digest 1 µg of lambda DNA-Eco81I in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ Tru9I
Source: Thermus ruber RFL1

packaging	Mfr. No
300 units Poly Tube	BP8064-1

Buffer 1	50-100%
Buffer 2	50-100%
Buffer 3	20-50%
Buffer 4	50-100%
Buffer 5	100%

Applications: OPTIZYME™ Tru9I digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...T^T A A...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2, 100mM KCl and 0.1mg/mℓ BSA; Incubate at 65°C; To ensure higher efficiency of digestion, perform the cleavage reaction under paraffin oil.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of Tru1I required to digest 1 µg of lambda DNA in 1 hour at 65°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay
Recommended storage: -20°C

OPTIZYME™ VspI
Source: Vibrio species

packaging	Mfr. No
1000 units Poly Tube	BP8055-1

Buffer 1	0-20%
Buffer 2	50-100%
Buffer 3	100%
Buffer 4	100%
Buffer 5	20-50%

Applications: OPTIZYME™ VspI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...A T^T A A T...3'
Supplied With: 10X OPTIZYME Buffer 3
Conditions for 100% Activity: 1X OPTIZYME Buffer 3: 50mM Tris-HCl (pH 7.5 at 37°C), 10mM MgCl2, 100mM NaCl and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of VspI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ XbaI
Source: Xanthomonas badrii

packaging	Mfr. No
2000 units Poly Tube	BP8008-1
10000 units Poly Tube	BP8008-5

Buffer 1	50-100%
Buffer 2	50-100%
Buffer 3	20-50%
Buffer 4	100%
Buffer 5	0-20%

Applications: OPTIZYME™ XbaI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...T^C T A G A...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 7mM 2-mercaptoethanol, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of XbaI required to digest 1 µg of lambda DNA dam --SmaI fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ XhoI
Source: Xanthomonas holcicola

packaging	Mfr. No
3000 units Poly Tube	BP8010-1
10000 units Poly Tube	BP8010-5

Buffer 1	0-20%
Buffer 2	50-100%
Buffer 3	50-100%
Buffer 4	20-50%
Buffer 5	100%

Applications: OPTIZYME™ XhoI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'....C^T C G A G...3'
Supplied With: 10X OPTIZYME Buffer 5
Conditions for 100% Activity: 1X OPTIZYME Buffer 5: 10mM Tris-HCl (pH 8.5 at 37°C), 10mM MgCl2 , 100mM KCl and 0.1mg/mℓ BSA; Incubate at 37°C.
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of XhoI required to digest 1 µg of lambda DNA-HindIII fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ XmaJI
Source: Xanthomonas maltophilia Jo 85-025

packaging	Mfr. No
200 units Poly Tube	BP8082-1

Buffer 1	20-50%
Buffer 2	50-100%
Buffer 3	50-100%
Buffer 4	100%
Buffer 5	50-100%

Applications: OPTIZYME™ XmaJI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...C^C T A G G...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.4 at 25°C), 100mM KCl, 1mM DTT, 1mM EDTA, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of XmaJI required to digest 1 µg of lambda DNA-SmaI fragments in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Blue/White Colony Certified, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ XmnI
Source: E. coli

packaging	Mfr. No
500 units Poly Tube	BP8052-1

Buffer 1 ..... 20-50%
Buffer 2 ..... 50-100%
Buffer 3 ..... 0-20%
Buffer 4 ..... 100%
Buffer 5 ..... 0-20%

Applications: OPTIZYME™ XmnI digests dsDNA with the recognition sequence indicated below.
Recognition Sequence: 5'...G A A N N^N N T T C...3'
Supplied With: 10X OPTIZYME Buffer 4
Conditions for 100% Activity: 1X OPTIZYME Buffer 4: 33mM Tris-acetate (pH 7.9 at 37°C), 10mM Mg-acetate, 66mM K-acetate and 0.1mg/mℓ BSA; Incubate at 37°C
Concentration: 10u/µℓ
Storage Buffer Components: 10mM Tris-HCl (pH 7.5 at 25°C), 100mM KCl, 1mM DTT, 5mM MgCl2, 0.2mg/mℓ BSA and 50% (v/v) glycerol
Unit Definition: One unit is defined as the amount of XmnI required to digest 1 µg of lambda DNA in 1 hour at 37°C in 50 µℓ of recommended reaction buffer.
Tested for: Overdigestion Assay, Ligation/Re-Cutting Assay, Genome Qualified
Recommended storage: -20°C

OPTIZYME™ 10X Buffer 1

packaging	Mfr. No
5X1mℓ Poly Tube	BP8084-1

Applications: The OPTIZYME™ Five Buffer System ensures the optimum reaction conditions for each restriction enzyme. This system consists of 10X Buffer 1, 10X Buffer 2, 10X Buffer 3, 10X Buffer 4 and 10X Buffer 5. The recommended buffer is supplied with each enzyme. To ensure consistent enzyme performance, OPTIZYME™ restriction enzyme buffers contain BSA, which enhances the stability of many enzymes and binds contaminants that may be present in DNA preparations. Multiple freeze-thaw cycles of the buffers will not cause BSA precipitation. OPTIZYME™ restriction enzymes exhibit 100% of their certified activity in the recommended buffer.
Components: 100mM Tris-HCl (pH 7.5 at 37°C), 100mM MgCl2, 1 mg/mℓ BSA
Tested for: Functional Test, Endo- and Exonucleases Assay, Nicking Activity Assay
Recommended storage: -20°C

OPTIZYME™ 10X Buffer 2

packaging	Mfr. No
5X1mℓ Poly Tube	BP8085-1

Applications: The OPTIZYME™ Five Buffer System ensures the optimum reaction conditions for each restriction enzyme. This system consists of 10X Buffer 1, 10X Buffer 2, 10X Buffer 3, 10X Buffer 4 and 10X Buffer 5. The recommended buffer is supplied with each enzyme. To ensure consistent enzyme performance, OPTIZYME™ restriction enzyme buffers contain BSA, which enhances the stability of many enzymes and binds contaminants that may be present in DNA preparations. Multiple freeze-thaw cycles of the buffers will not cause BSA precipitation. OPTIZYME™ restriction enzymes exhibit 100% of their certified activity in the recommended buffer.
Components: 100mM Tris-HCl (pH 7.5 at 37°C), 100mM MgCl2, 500mM NaCl, 1mg/mℓ BSA
Tested for: Functional Test, Endo- and Exonucleases Assay, Nicking Activity Assay
Recommended storage: -20°C

OPTIZYME™ 10X Buffer 3

packaging	Mfr. No
5X1mℓ Poly Tube	BP8086-1

Applications: The OPTIZYME™ Five Buffer System ensures the optimum reaction conditions for each restriction enzyme. This system consists of 10X Buffer 1, 10X Buffer 2, 10X Buffer 3, 10X Buffer 4 and 10X Buffer 5. The recommended buffer is supplied with each enzyme. To ensure consistent enzyme performance, OPTIZYME™ restriction enzyme buffers contain BSA, which enhances the stability of many enzymes and binds contaminants that may be present in DNA preparations. Multiple freeze-thaw cycles of the buffers will not cause BSA precipitation. OPTIZYME™ restriction enzymes exhibit 100% of their certified activity in the recommended buffer.
Components: 500mM Tris-HCl (pH 7.5 at 37°C), 100mM MgCl2, 1M NaCl, 1mg/mℓ BSA
Tested for: Functional Test, Endo- and Exonucleases Assay, Nicking Activity Assay
Recommended storage: -20°C

OPTIZYME™ 10X Buffer 4

packaging	Mfr. No
5X1mℓ Poly Tube	BP8087-1

Applications: The OPTIZYME™ Five Buffer System ensures the optimum reaction conditions for each restriction enzyme. This system consists of 10X Buffer 1, 10X Buffer 2, 10X Buffer 3, 10X Buffer 4 and 10X Buffer 5. The recommended buffer is supplied with each enzyme. To ensure consistent enzyme performance, OPTIZYME™ restriction enzyme buffers contain BSA, which enhances the stability of many enzymes and binds contaminants that may be present in DNA preparations. Multiple freeze-thaw cycles of the buffers will not cause BSA precipitation. OPTIZYME™ restriction enzymes exhibit 100% of their certified activity in the recommended buffer.
Components: 330mM Tris-acetate (pH 7.9 at 37°C), 100mM magnesium acetate, 660mM potassium acetate, 1mg/mℓ BSA
Tested for: Functional Test, Endo- and Exonucleases Assay, Nicking Activity Assay
Recommended storage: -20°C

OPTIZYME™ 10X Buffer 5

packaging	Mfr. No
5X1mℓ Poly Tube	BP8088-1

Applications: The OPTIZYME™ Five Buffer System ensures the optimum reaction conditions for each restriction enzyme. This system consists of 10X Buffer 1, 10X Buffer 2, 10X Buffer 3, 10X Buffer 4 and 10X Buffer 5. The recommended buffer is supplied with each enzyme. To ensure consistent enzyme performance, OPTIZYME™ restriction enzyme buffers contain BSA, which enhances the stability of many enzymes and binds contaminants that may be present in DNA preparations. Multiple freeze-thaw cycles of the buffers will not cause BSA precipitation. OPTIZYME™ restriction enzymes exhibit 100% of their certified activity in the recommended buffer.
Components: 100mM Tris HCl (pH 8.5 at 37°C), 100mM MgCl2, 1M KCl , 1mg/mℓ BSA
Tested for: Functional Test, Endo- and Exonucleases Assay, Nicking Activity Assay
Recommended storage: -20°C

OPTIZYME™ 10X Buffer AarI, ScaI, PasI

packaging	Mfr. No
1 mℓ Poly Tube	BP8096-1

Applications: The OPTIZYME™ Five Buffer System ensures the optimum reaction conditions for each restriction enzyme. This system consists of 10X Buffer 1, 10X Buffer 2, 10X Buffer 3, 10X Buffer 4 and 10X Buffer 5. The recommended buffer is supplied with each enzyme. To ensure consistent enzyme performance, OPTIZYME™ restriction enzyme buffers contain BSA, which enhances the stability of many enzymes and binds contaminants that may be present in DNA preparations. Multiple freeze-thaw cycles of the buffers will not cause BSA precipitation. OPTIZYME™ restriction enzymes exhibit 100% of their certified activity in the recommended buffer.
Components: 100mM Bis-Tris Propane-HCl (pH 6.5 at 37°C), 100mM MgCl2, 1M KCl, 1mg/mℓ BSA
Tested for: Functional Test, Endo- and Exonucleases Assay, Nicking Activity Assay
Recommended storage: -20°C

OPTIZYME™ 10X Buffer BamHI

packaging	Mfr. No
5X1mℓ Poly Tube	BP8089-1

Applications: The OPTIZYME™ Five Buffer System ensures the optimum reaction conditions for each restriction enzyme. This system consists of 10X Buffer 1, 10X Buffer 2, 10X Buffer 3, 10X Buffer 4 and 10X Buffer 5. The recommended buffer is supplied with each enzyme. To ensure consistent enzyme performance, OPTIZYME™ restriction enzyme buffers contain BSA, which enhances the stability of many enzymes and binds contaminants that may be present in DNA preparations. Multiple freeze-thaw cycles of the buffers will not cause BSA precipitation. OPTIZYME™ restriction enzymes exhibit 100% of their certified activity in the recommended buffer.
Components: 100mM Tris-HCl (pH 8.0 at 37°C), 50mM MgCl2, 1M KCl , 0.2 % Triton X-100, 1mg/mℓ BSA
Tested for: Functional Test, Endo- and Exonucleases Assay, Nicking Activity Assay
Recommended storage: -20°C

OPTIZYME™ 10X Buffer Cfr9I

packaging	Mfr. No
1 mℓ Poly Tube	BP8093-1

Applications: The OPTIZYME™ Five Buffer System ensures the optimum reaction conditions for each restriction enzyme. This system consists of 10X Buffer 1, 10X Buffer 2, 10X Buffer 3, 10X Buffer 4 and 10X Buffer 5. The recommended buffer is supplied with each enzyme. To ensure consistent enzyme performance, OPTIZYME™ restriction enzyme buffers contain BSA, which enhances the stability of many enzymes and binds contaminants that may be present in DNA preparations. Multiple freeze-thaw cycles of the buffers will not cause BSA precipitation. OPTIZYME™ restriction enzymes exhibit 100% of their certified activity in the recommended buffer.
Components: 100mM Tris-HCl (pH 7.2 at 37°C), 50mM MgCl2, 2M sodium glutamate, 1mg/mℓ BSA
Tested for: Functional Test, Endo- and Exonucleases Assay, Nicking Activity Assay
Recommended storage: -20°C

OPTIZYME™ 10X Buffer Ecl136II, SacI

packaging	Mfr. No
1 mℓ Poly Tube	BP8095-1

Applications: The OPTIZYME™ Five Buffer System ensures the optimum reaction conditions for each restriction enzyme. This system consists of 10X Buffer 1, 10X Buffer 2, 10X Buffer 3, 10X Buffer 4 and 10X Buffer 5. The recommended buffer is supplied with each enzyme. To ensure consistent enzyme performance, OPTIZYME™ restriction enzyme buffers contain BSA, which enhances the stability of many enzymes and binds contaminants that may be present in DNA preparations. Multiple freeze-thaw cycles of the buffers will not cause BSA precipitation. OPTIZYME™ restriction enzymes exhibit 100% of their certified activity in the recommended buffer.
Components: 100mM Bis-Tris Propane-HCl (pH 6.5 at 37°C), 100mM MgCl2, 1mg/mℓ BSA
Tested for: Functional Test, Endo- and Exonucleases Assay, Nicking Activity Assay
Recommended storage: -20°C

OPTIZYME™ 10X Buffer EcoRI

packaging	Mfr. No
5X1mℓ Poly Tube	BP8090-1

Applications: The OPTIZYME™ Five Buffer System ensures the optimum reaction conditions for each restriction enzyme. This system consists of 10X Buffer 1, 10X Buffer 2, 10X Buffer 3, 10X Buffer 4 and 10X Buffer 5. The recommended buffer is supplied with each enzyme. To ensure consistent enzyme performance, OPTIZYME™ restriction enzyme buffers contain BSA, which enhances the stability of many enzymes and binds contaminants that may be present in DNA preparations. Multiple freeze-thaw cycles of the buffers will not cause BSA precipitation. OPTIZYME™ restriction enzymes exhibit 100% of their certified activity in the recommended buffer.
Components: 500mM Tris-HCl (pH 7.5 at 37°C), 100mM MgCl2, 1M NaCl, 0.2 % Triton X-100, 1mg/mℓ BSA
Tested for: Functional Test, Endo- and Exonucleases Assay, Nicking Activity Assay
Recommended storage: -20°C

OPTIZYME™ 10X Buffer KpnI

packaging	Mfr. No
1 mℓ Poly Tube	BP8094-1

Applications: The OPTIZYME™ Five Buffer System ensures the optimum reaction conditions for each restriction enzyme. This system consists of 10X Buffer 1, 10X Buffer 2, 10X Buffer 3, 10X Buffer 4 and 10X Buffer 5. The recommended buffer is supplied with each enzyme. To ensure consistent enzyme performance, OPTIZYME™ restriction enzyme buffers contain BSA, which enhances the stability of many enzymes and binds contaminants that may be present in DNA preparations. Multiple freeze-thaw cycles of the buffers will not cause BSA precipitation. OPTIZYME™ restriction enzymes exhibit 100% of their certified activity in the recommended buffer.
Components: 100mM Tris-HCl (pH 7.5 at 37°C), 100mM MgCl2, 0.2% Triton X-100, 1mg/mℓ BSA
Tested for: Functional Test, Endo- and Exonucleases Assay, Nicking Activity Assay
Recommended storage: -20°C

OPTIZYME™ 10X Buffer Sau3AI

packaging		Mfr. No
1 mℓ	Poly Tube	**BP8091-1**

Applications: The OPTIZYME™ Five Buffer System ensures the optimum reaction conditions for each restriction enzyme. This system consists of 10X Buffer 1, 10X Buffer 2, 10X Buffer 3, 10X Buffer 4 and 10X Buffer 5. The recommended buffer is supplied with each enzyme. To ensure consistent enzyme performance, OPTIZYME™ restriction enzyme buffers contain BSA, which enhances the stability of many enzymes and binds contaminants that may be present in DNA preparations. Multiple freeze-thaw cycles of the buffers will not cause BSA precipitation. OPTIZYME™ restriction enzymes exhibit 100% of their certified activity in the recommended buffer.
Components: 330mM Tris-acetate (pH 7.9 at 37°C), 100mM Mg-acetate, 660mM K-acetate, 0.2% Triton X-100 and 1mg/mℓ BSA
Tested for: Functional Test, Endo- and Exonucleases Assay, Nicking Activity Assay
Recommended storage: -20°C

OPTIZYME™ 10X Buffer TaqI

packaging		Mfr. No
1 mℓ	Poly Tube	**BP8092-1**

Applications: The OPTIZYME™ Five Buffer System ensures the optimum reaction conditions for each restriction enzyme. This system consists of 10X Buffer 1, 10X Buffer 2, 10X Buffer 3, 10X Buffer 4 and 10X Buffer 5. The recommended buffer is supplied with each enzyme. To ensure consistent enzyme performance, OPTIZYME™ restriction enzyme buffers contain BSA, which enhances the stability of many enzymes and binds contaminants that may be present in DNA preparations. Multiple freeze-thaw cycles of the buffers will not cause BSA precipitation. OPTIZYME™ restriction enzymes exhibit 100% of their certified activity in the recommended buffer.
Components: 100mM Tris-HCl (pH 8.0 at 37°C), 50mM MgCl2, 1M NaCl, 1mg/mℓ BSA
Tested for: Functional Test, Endo- and Exonucleases Assay, Nicking Activity Assay
Recommended storage: -20°C