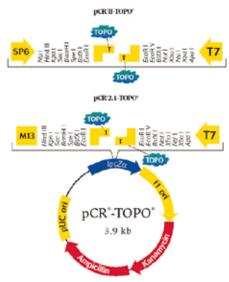
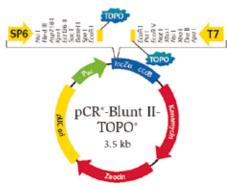
# **Cloning and Protein expression**

Cloning kits



Taq or Tfi DNA polymerases 3kb: TOPO® TA cloning kits



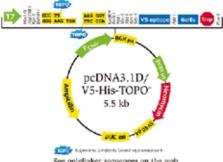
Proof reading polymerases Pfx50™ etc. 3kb: zero blunt TOPO® cloning kits

Note: When gene is ligated into these vectors the *ccdB* gene is disrupted enabling only colonies with gene insert to grow



Polymerases for long PCR high fidelity etc., 3kb to 10kb: TOPO® XL PCR cloning kit

Note: Combines zero background and gel purification to enable high efficiency cloning of long PCR products



See polylinker sequences on the web.

### **TOPO® cloning and expression kits**

#### e invitrogen life

#### Features and benefits

- No restriction enzymes involved
- No compatibility issues between insert and vector
- No restriction on what sequences can be cloned
- Faster much less planning and preparation and fewer steps involved
- No vector preparation
- Higher efficiencies
- A large range of TOPO vectors are available for cloning, expression and for making Gateway® entry vectors

## **TOPO Cloning Kits**

TOPO cloning kits contain:TOPO® Vector, salt solution, dNTPs, control template and primers, forward and reverse primers, One Shot® Chemically Competent or Electrocomp<sup>™</sup> E. coli, S.O.C. medium, and a control plasmid

AG

NEV

- Blue/white colony screening for selection of recombinants
- The choice of TOPO® Cloning Kit depends on the PCR enzyme used to amplify the gene and gene length:

TOPO® Expression vectors are available for gene expression in prokaryotes (E.Coli), yeast (Saccharomyces, Pichia), Baculovirus and DES® vectors for insect cells, and mammalian cells.

#### **TOPO® Cloning Kits for Sequencing**

The kits contain TOPO® cloning vectors with fewer restriction sites and so the sequence priming sites are closer to the gene insert; this means you sequence more of the gene and less of the vector. Sequencing kits are pCR®4-TOPO® for TA Cloning and pCR®4Blunt-TOPO® for Zero Blunt TOPO cloning.

#### **TOPO® and Cloning Kits for Protein Expression**

A quick and efficient method for insertion of a gene into an expression vector in the correct 5'-3' orientation required for protein expression in a host cell. The user PCR amplifies their gene using a forward primer that starts with 5'-CACC, and the blunt PCR products are inserted in a directional TOPO® expression vector. Equivalent non-directional TOPO® expression vectors for Blunt PCR products are also available.

Gateway® Entry Clones with Directional TOPO® Cloning: Directional TOPO® entry vectors are available for creating a Gateway® entry clone. Once you have cloned your PCR product into an entry vector, it can be rapidly shuttled to a wide variety of Gateway® destination vectors for protein expression.

pcDNA™ 3.1 Directional TOPO® Expression Kits: The pcDNA3.1D/V5-His-TOPO® vector contains a CMV promoter for high-level constitutive expression in a wide range of mammalian cell hosts, and a neomycin resistance gene for selection of stable mammalian cell lines with Geneticin® selection agent. Lentivirus expression kits for mammalian cells are also popular, particularly for growth arrested cells.

Champion pET Directional Expression Kits: The pET/D-TOPO® vectors contain a T7 lac promoter for protein expression in *E.coli* strains that express T7 RNA polymerase eg BL21 Star™ (DE3) for high level protein expression.

ViraPower lentiviral directional TOPO expression kit™: allows creation of a replication incompetent lentivirus that is used to deliver and express your gene of interest in either dividing or non-dividing mammalian cells.

For the full range of TOPO cloning kits, please enquire with our customer services team/technical support team.

Catalogue No	Description	Reactions per pack
VXK450001	TOPO® TA Cloning® Kit (with pCR®2.1-TOPO® vector) with One Shot® TOP10 chemically competent <i>E. coli</i>	20
VXK456001	TOPO TA Cloning® Kit (with pCR®2.1-TOPO® vector) with One Shot® TOP10 Electrocomp™ <i>E. coli</i>	20
VXK450002	TOPO® TA Cloning® Kit (with pCR®2.1-TOPO®) with One Shot TOP10 chemically competent <i>E. coli</i> and PureLink™Quick Plasmid Miniprep Kit	20 preps
VXK280020	Zero Blunt® TOPO® PCR Cloning® Kit with One Shot® TOP10 chemically competent <i>E. coli</i>	20
VXK703020	TOPO® XL PCR Cloning® Kit with One Shot® Mach1™ T1 Phage- resistant chemically competent <i>E. coli</i>	20
VXK4575J10	TOPO TA Cloning® Kit for sequencing with One Shot® TOP10 chemically competent <i>E. coli</i>	10
VXK2875J10	Zero Blunt® TOPO® PCR Cloning Kit for sequencing with One Shot® TOP10 chemically competent <i>E. coli</i>	10
VXK10001	Champion™ pET100 Directional TOPO® Expression Kit with BL21 Star™ (DE3) One Shot® chemically competent <i>E. coli</i>	20
VXK490001	pcDNA™3.1 Directional TOPO® Expression Kit	20
VXK495000	ViraPower™ Lentiviral Directional TOPO® Expression Kit	1 kit