



## Gateway® Technology enables rapid gene expression and analysis



The fastest way into multiple expression systems, Gateway® Technology:

- Eliminates tedious, time-consuming cloning/sub-cloning steps
- Reduces research variables by using only one clone
- Works with TOPO® Cloning to accelerate your research

## Get on the fast track to **functional genomics and proteomics**

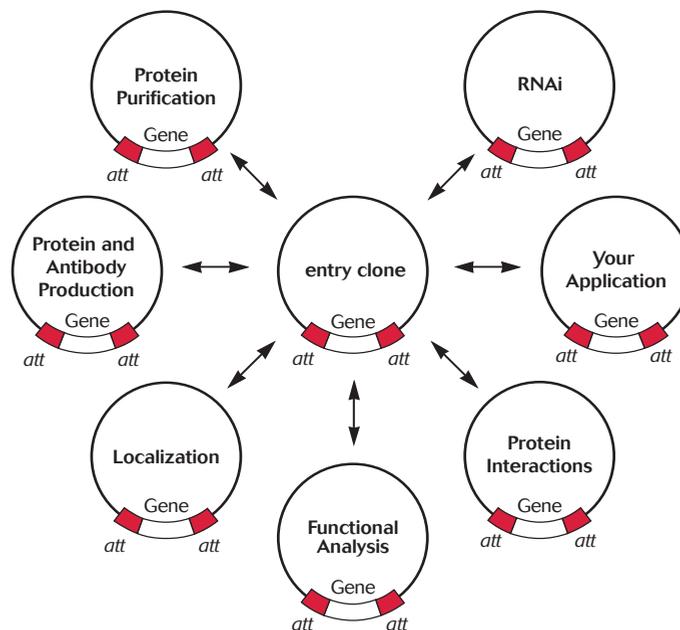
Join the race for protein analysis and discovery. Gateway® Technology minimizes cloning steps and streamlines your research so you rapidly advance to expression, characterization, and functional analysis.

### Ultimate flexibility

Innovative and highly efficient, Gateway® Technology eliminates many time-consuming cloning and subcloning steps. Once you clone your gene of interest or DNA fragment into a Gateway® vector, you can shuttle it to as many

expression and functional analysis systems as you need (Figure 1). By comparing a variety of expression systems, you can optimize for the best results and highest yields.

Figure 1 - Gateway® Technology—Rapidly move from one application to the next



## Consistent results

Unlike traditional cloning methods, Gateway® Technology enables you to access an unlimited number of systems from one initial construct. From target identification to validation via biochemical or functional assays, use the same clone throughout your studies, ensuring consistent results. No more

subcloning or worrying about sequence integrity and erroneous results. See Table 1 for a wide variety of products that incorporate Gateway® Technology. From initial gene expression in mammalian cells to localization and interaction studies, there is a system made for your convenience.

**Table 1 - Gateway® Vectors and Systems are ideal for all stages of research**

Stage of research	Application	Gateway® products
Gene Acquisition	Drug target identification	Ultimate™ ORF Clone collection
Cloning	Sequencing	Entry and donor vectors
	Cloning & subcloning Building clone & library collections	CloneMiner™ cDNA Library Construction Kit
Delivery	Gene delivery into challenging mammalian cell lines	ViraPower™ Expression Systems
	<i>In vivo</i> studies in animal model systems	ViraPower™ Lentiviral Expression System
Protein Production	Protein arrays	Expressway™ Plus Expression System
	Antibody or antigen production	Champion™ pET Expression System BaculoDirect™ Expression System
Protein Analysis	Function	pcDNA™ mammalian destination vectors
	Interactions	Two-hybrid systems
	Reporter assays	GeneBLAzer™ Technology
	Localization	GFP destination vectors
	RNAi	BLOCK-iT™ Technology
	Purification	Tag-on-Demand™ Technology

## Reliable, rapid, and robust results

Gateway® Technology is based on the well-characterized lambda phage site-specific system. Take advantage of a highly efficient, one-hour recombination reaction to transfer fragments from one vector to the next. Gateway® reactions are robust with greater than 95% recombinants in the correct orientation and reading frame. In addition, the sequence of your gene of interest or DNA fragment is entirely conserved, ensuring consistent results. Once your gene of interest is in the

Gateway® Technology, there is:

- No need to subclone for each application
- No reason to sequence each clone
- No worry about maintaining the reading frame during transfer

So you can expect great results.

## Accelerate your research with TOPO® Cloning and Gateway® Technology

TOPO® Cloning is the quickest entry method into Gateway® Technology. With only a five-minute benchtop ligation, Directional TOPO® Cloning enables you to rapidly clone your PCR products into a Gateway® vector, achieving greater than 90% recombinants (Figure 2). After the TOPO® reaction, your Gateway® entry clone can be moved into a variety of expression vectors and systems using a simple,

robust, and directional one-hour recombination reaction. No ligase, post-PCR procedures, restriction enzymes, or extensive screening are required with either TOPO® Cloning or Gateway® transfer, saving you hours of tedious cloning steps. See Table 2 for a sample of TOPO® vectors compatible with Gateway® Technology.

Figure 2 - How TOPO® Cloning and Gateway® transfer work

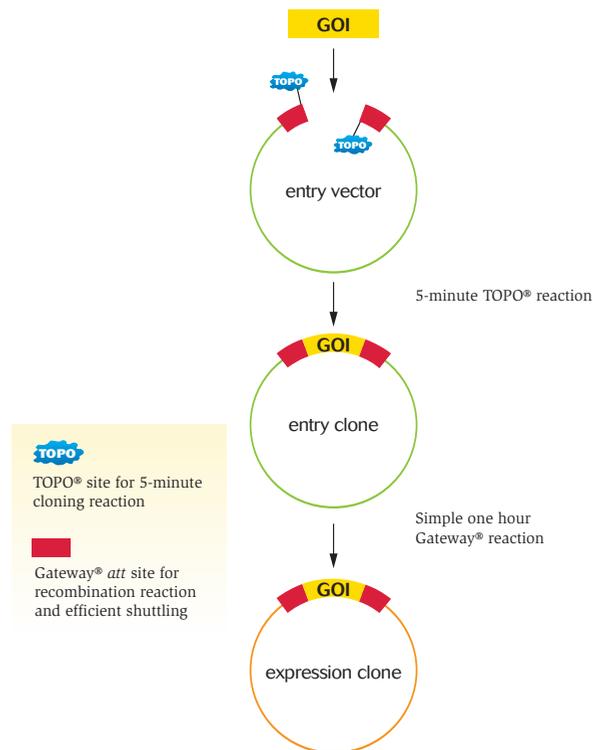


Table 2 - TOPO® entry vectors for the fastest entry into Gateway® Technology

Product Name	Features
pENTR™ Directional TOPO® Cloning Kit	<ul style="list-style-type: none"> <li>• att sites for rapid transfer to any destination vector</li> </ul>
pENTR™/SD Directional TOPO® Cloning Kit	<ul style="list-style-type: none"> <li>• Shine-Dalgarno (SD) sequence for efficient initiation and translation</li> <li>• att sites for rapid transfer to any destination vector</li> </ul>

## For the fastest cloning directly into experimental analysis

To move even faster into an expression system and directly into experimental analysis, clone straight into a mammalian Gateway® Directional TOPO® expression vector (Table 3). This allows you to express your gene in a wide variety of mammalian cells from a high-level,

constitutive promoter. Once you have completed your analysis in the system or host, you can quickly move to the next stage of your research via Gateway® transfer (Figure 3).

Figure 3 - Cloning into a mammalian Gateway® Directional TOPO® expression vector

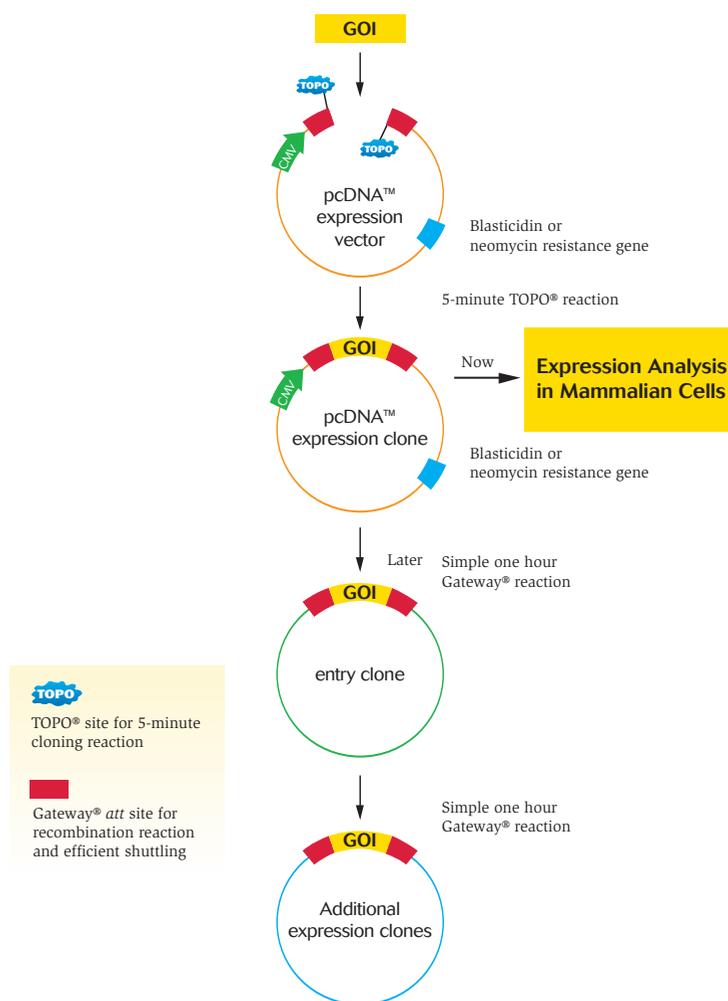


Table 3 - TOPO® Kits for the fastest entry into multiple expression systems

Product Name	Features
pcDNA™3.2/V5 Gateway® Directional TOPO® Expression Kit	<ul style="list-style-type: none"> <li>• CMV promoter</li> <li>• Geneticin® selection marker</li> <li>• att sites for rapid transfer to any entry vector</li> </ul>
pcDNA™6.2/V5 Gateway® Directional TOPO® Expression Kit	<ul style="list-style-type: none"> <li>• CMV promoter</li> <li>• Blasticidin selection marker</li> <li>• att sites for rapid transfer to any entry vector</li> </ul>

## Rapidly transition from gene to result: the choice for analysis is yours

For successful expression and functional results, choose a cloning method that ensures the ultimate flexibility and consistency. Get started today with a Gateway® Directional TOPO® Cloning Kit or Expression Kit. Choose the Directional TOPO® Cloning Kit if you want to access a wide variety of applications (Figure 1). Select the Directional TOPO® Expression Kit if you want to immediately express your gene in mammalian cells. You will still be able to transfer your gene rapidly to other systems later (Figure 3). To find out more about this revolutionary technology, visit [www.invitrogen.com/gateway](http://www.invitrogen.com/gateway).

## Ordering Information

### Product

pENTR™ Directional TOPO® Cloning Kit  
 pENTR™/SD Directional TOPO® Cloning Kit  
 pcDNA™3.2/V5 Gateway® Directional TOPO® Expression Kit  
 pcDNA™6.2/V5 Gateway® Directional TOPO® Expression Kit

### Cat. No.

K2400-20  
 K2420-20  
 K2440-20  
 K2460-20



These products may be covered by one or more Limited Use Label Licenses (See the Invitrogen catalog or our web site, [www.invitrogen.com](http://www.invitrogen.com)). By the use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses.

For research use only. Not intended for any animal or human therapeutic or diagnostic use. Printed in the U.S.A. ©2003 Invitrogen Corporation. All rights reserved. Reproduction forbidden without permission.

### Corporate headquarters:

1600 Faraday Avenue • Carlsbad, CA 92008 USA • Tel: 760 603 7200 • Fax: 760 602 6500 • Toll Free Tel: 800 955 6288 • E-mail: [tech\\_service@invitrogen.com](mailto:tech_service@invitrogen.com) [www.invitrogen.com](http://www.invitrogen.com)

### European headquarters:

Invitrogen Ltd • Inchinnan Business Park • 3 Fountain Drive • Paisley PA4 9RF, UK • Tel: +44 (0) 141 814 6100 • Fax: +44 (0) 141 814 6260 • E-mail: [eurotech@invitrogen.com](mailto:eurotech@invitrogen.com)