Invitrogen™
life technologies

Quick, convenient, inducible expression in *Saccharomyces cerevisiae*

The YES™ Vector collection gives you:

- Regulated expression from the *GAL1* promoter for easy induction
- The choice of two origins of replication for varying levels of inducible expression in *Saccharomyces cerevisiae*
- The speed and efficiency of TOPO® Cloning
- The flexibility and convenience of Gateway™ Technology

You will be in control of your expression with the effortless induction of the *GAL1* promoter. Each YES™ Vector contains the *GAL1* promoter and enhancer sequences for regulated expression. Transcription from the *GAL1* promoter is repressed in the presence of glucose (1) and induced by removing glucose and adding galactose as a carbon source (2).

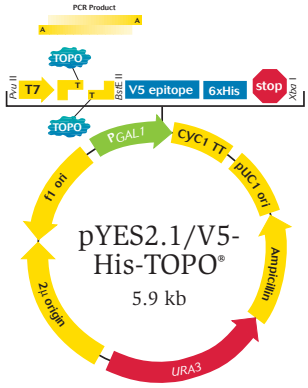
Expression results faster

The YES™ Vector collection offers the option of TOPO® Cloning, the fastest method for cloning an amplified gene of interest into a vector. With the pYES2.1/V5-His TOPO® vector (Figure 1), you can clone your *Taq*-amplified PCR products in a 5-minute benchtop incubation and produce ≥85% recombinants. The vector features include:

- 2µ origin of replication for high-copy plasmid maintenance in *S. cerevisiae*
- *URA3* gene for selection in *S. cerevisiae*
- C-terminal V5 eptitope and polyhistidine tag for easy detection and purification of the recombinant protein

You'll get fast and easy cloning combined with the inducible expression of the *GAL1* promoter.

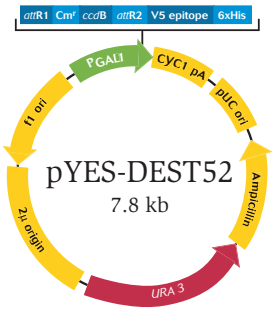
Figure 1 - pYES2.1/V5-His-TOPO® vector



The power of Gateway™

The pYES-DEST52 vector (Figure 2) combines the easy cloning of Gateway™ technology with the regulated expression of the pYES2 vector. Gateway™ Technology allows transfer of your gene of interest between different vectors by recombination, eliminating the need for restriction endonucleases and ligase. You simply clone your gene of interest into an entry vector and then move it into the expression system of your choice. You can express your gene of interest in *S. cerevisiae*, and then easily move the gene to another destination vector for expression in a different host.

Figure 2 - pYES-DEST52 vector



Expression options

The YES™ Vector Collection gives you the choice of two types of vectors: pYES or pYC. The pYES vectors are designed for high-level expression of recombinant proteins in *S. cerevisiae*. These vectors carry the 2µ origin of replication and are maintained episomally in high copy (10-40 copies per cell). The pYC vectors carry the *CEN6/ARSH4* origin and maintain the copy number of your gene of interest similar to those of wild-type genes (1-2 copies per cell).

pYES vectors

The pYES vectors are available with a variety of epitope tags and selection markers to satisfy your expression needs. The parental pYES2 vector (Figure 3) is utilized for native expression of your protein of interest. It contains the *URA3* selection marker for selection in yeast.

The pYES2/NT vector (Figure 4), derived from the parental backbone of pYES2, offers an N-terminal tag. It contains the Xpress™ epitope for simple detection with Invitrogen's Anti-Xpress™ Antibody and a polyhistidine (6xHis) tag for purification using nickel resin.

The pYES2/CT, pYES3/CT and pYES6/CT vectors (Figures 4 and 5) contain a C-terminal V5-His tag. The pYES2/CT vector contains the *URA3* marker for selection in *S. cerevisiae*, while the pYES3/CT vector has a *TRP1* selection marker. The pYES6/CT contains the resistance gene for selection with the antibiotic Blasticidin, a potent selection agent, which can be used at very low concentrations and in any strain regardless of auxotropic markers.

Figure 3 - pYES2 vector

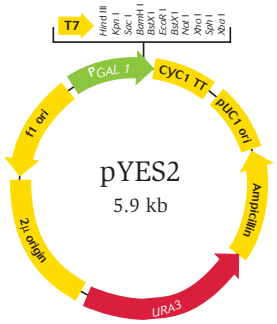


Figure 4 - pYES2/NT and pYES2/CT

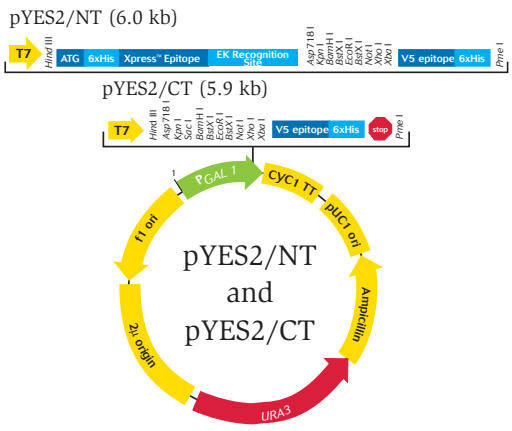
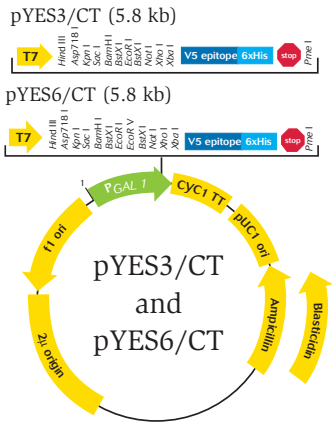


Figure 5 - pYES3/CT and pYES6/CT



pYC Vectors

The pYC vectors contain the *CEN6/ARSH4* origin of replication for low copy number within yeast. Available with a variety of selection markers, the pYC vectors also come with an assortment of epitope tags for detection and purification of the recombinant protein. The pYC2/NT vector has an N-terminal Xpress™-6xHis tag, while both the pYC2/CT and pYC6/CT vectors (Figure 6) contain a C-terminal V5-His tag. The pYC2/NT and pYC2/CT vectors offer the *URA3* gene marker for selection and the pYC6/CT vector carries the Blasticidin resistance gene for selection in yeast.

Figure 6 - pYC2/NT, pYC2/CT, and pYC6/CT

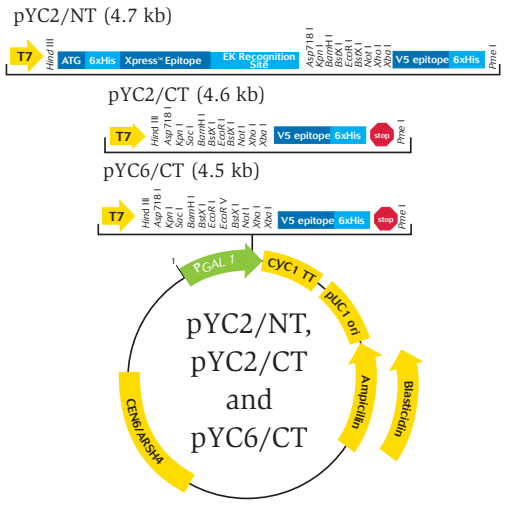


Table 1 - YES™ Vector Collection

Vector	Origin	Selection Marker	Tag
pYES2	2µ	*URA3*	–
pYES2/NT	2µ	*URA3*	NT Xpress™
pYES2/CT	2µ	*URA3*	CT V5-6xHis
pYES3/CT	2µ	*TRP1*	CT V5-6xHis
pYES6/CT	2µ	Blasticidin	CT V5-6xHis
pYC2/NT	*CEN6/ARSH4*	*URA3*	NT Xpress™
pYC2/CT	*CEN6/ARSH4*	*URA3*	CT V5-6xHis
pYC6/CT	*CEN6/ARSH4*	Blasticidin	CT V5-6xHis

CT = C-Terminal NT = N-Terminal

Easy yeast transformation

The *S.c.* EasyComp™ Transformation Kit is available for quick preparation of transformation-competent *Saccharomyces cerevisiae* cells. The *S.c.* EasyComp™ Kit offers significant advantages over other commonly used procedures such as spheroplast formation and LiCl methods. Preparation of competent cells takes less than 30 minutes using the optimized solutions included with the kit. The solutions are provided ready-to-use and are quality tested to ensure your success.

Your vector options

The YES™ Vector Collection provides you with a number of expression options. Choose the expression vector that best suits your needs and start your work today.

Ordering information

Product	Quantity	Cat. no.
pYES2.1 TOPO® Expression Kit	20 reactions	K4150-01
pYES-DEST52	6 µg	12286-019
pYES2	20 µg	V825-20
pYES2/NT A, B, & C	20 µg each	V8252-20
pYES2/CT	20 µg	V8251-20
pYES3/CT	20 µg	V8253-20
pYES6/CT	20 µg	V8254-20
pYC2/NT A, B, & C	20 µg each	V8256-20
pYC2/CT	20 µg	V8255-20
pYC6/CT	20 µg	V8257-20
pYES6/CT Starter Kit*	1 kit	V8254-01
pYC6/CT Starter Kit*	1 kit	V8257-01

Each YES™ Vector Kit includes 20 µg of expression vector, 20 µg of a *lac*Z control vector and an INV*Sc*1 yeast stab.

*Starter kits include 20 µg of the expression vector and expression control, an INV*Sc*1 yeast stab and 50 mg of Blasticidin.

References:

1. West, R.W.J., *et al.* (1984) *Mol. Cell. Biol.* **4:** 2467-2478.

2. Giniger, E. *et al.* (1985) *Cell* **40:** 767-774.

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