

Cloning

Cloning vectors and kits

Plasmid pBR328

MW : 5 kb

- ◆ Ampicillin, tetracycline and chloramphenicol resistant

This vector, derived from pBR325, has the *bom* site (basis of mobility) deleted and therefore is non-mobilizable; this makes pBR328 suitable where more stringent biological containment is required. This deletion also creates extra unique cloning sites in the chloramphenicol acetyltransferase gene: *Pvu* II, *Bsp*M II and *Bal* I.

- Remarks : *E. coli* general cloning vector; replicon: pMB1.
- Distributed in *Escherichia coli* K12 KMBL1164
- Marker : Ap^r, Cm^r, Tc^r

Description	Cat.#	Qty
pBR328	BM9830	1 u

Plasmid pUC18

MW : 2.7 kb

- ◆ Ampicillin resistant
- ◆ well-characterized vector.

High copy number plasmid, pUC18 is a cloning vector for many general application use. It carries Amp[®] gene as selectable marker, multiple cloning sites, and many other features.

- Marker : Ap^r
- Quality : OD_{260/280} Ratio : 1.81 (> 1.75)
OD₂₆₀ Reading : 1.002 (20 x dilution *50 µg/ml)
OD_{260/230} Ratio : 1.79 (> 1.50)

Description	Cat.#	Qty
pUC18	T53050	100 µl

Plasmid pUC19

MW : 2.7 kb

- ◆ Ampicillin resistant
- ◆ A well-characterized vector.

High copy number plasmid, pUC19 is a cloning vector for many general application use. It carries Ampr gene as selectable marker, multiple cloning sites, and many other features.

- pUC18 differ from pUC19 in their multiple cloning site orientation.
- Quality : OD_{260/280} Ratio : > 1.75
OD_{260/230} Ratio : > 1.50

Description	Cat.#	Qty
pUC19	T53060	100 µl

Plasmid pUC119

MW : 3.2 Kb

- ◆ A well-characterized vector
- ◆ For general cloning use

pUC119 is a phagemid vector permitting production of single-stranded DNA. A pUC derivative contains the IG (intergenic) region of M13 for production of ssDNA.

- Cloning Sites : BamHI, ACCI, EcoRI, HincII, KpnI, PstI, Sall, SmaI, SphI, SstI, Asp178, XbaI, XmaI, Replicon : pMB1, M13
- Marker : Ap^r

Description	Cat.#	Qty
pUC119	T53070	100 µl

Contents : 2X Ligase Buffer, T4 DNA Ligase.

Recombinant DNA technology has proven itself as an indispensable tool in all areas of biological research. From molecular genetics to X-ray crystallography, the ability to manipulate genes at their most fundamental level offers endless potential for study. Essential to the success of DNA manipulation and recombination is the joining of two foreign strands of DNA by a **ligation** reaction to create one complete construct. Interchim provides convenient ligation kits, and high quality reagents for ligation.

Ligation kits

Rapid Ligation Kit

The Rapid Ligation Kit enables ligation of both cohesive and blunt-ended DNA fragments in five minutes at room temperature (approx. 20 to 25 °C). It is optimized for efficient ligation of both cohesive and blunt-ended fragments. All reagents required for ligation are provided.

The Rapid Ligation Kit is suitable for many applications :

- ◆ Cloning into vectors
- ◆ TA cloning
- ◆ Library construction
- ◆ Recircularization of linear DNA
- ◆ Ligation of linkers

The LiGator™ Kit Components :
T4 DNA Ligase (4U/ul), 10X Reaction Buffer,
Nuclease-Free Water, Agarose 3:1 HRB

Description	Cat.#	Qty
Rapid Ligation Kit	UPN14171	50 tests

The LiGator™ Kit

The LiGator Kit allows ligation reactions to be performed in 15 minutes, much faster than the conventional overnight ligation protocol. This advanced method affords the end user the opportunity to purify, ligate, and transform all in one day. Positive colonies containing the construct of interest are achieved overnight rather than in two days. The LiGator Kit significantly reduces reaction times because it incorporates the theory of "molecular crowding". This not only aids in the speed of the reaction, but also allows for more efficient cloning when using low concentrations of DNA. Additionally, by altering the distribution of ligation products, intermolecular ligation (vector-to-vector, for example) is minimized. The Kit contains enough reagents to perform 30 ligation reactions.

Activity :

350 ng of I Hind III digested DNA incubated with 1 ul T4 DNA Ligase in 1X LiGator Reaction Buffer for 15 minutes at room temperature results in the visualization of band(s) of at least 21 kb.

Description	Cat.#	Qty
The LiGator™ Kit	N14170	1 Kit

Ligation reagents

T4 DNA Ligase

T4 DNA Ligase catalyzes the formation of a phosphodiester bond between juxtaposed 5'-phosphate and 3'-hydroxyl termini in duplex DNA or RNA. T4 DNA Ligase can be inactivated by incubation at 65°C for 10 minutes.

Description	Cat.#	Qty
T4 DNA Ligase, 150 µl	406681	15 000 Units
(E. coli lambda lysogen NM 989)	406680	75 000 Units

Unit definition : One unit is defined as the amount of enzyme required to give 50% ligation of Hind III fragments of I DNA (5' DNA termini concentration of 0.12 µM, 300 µg/ml) in a total reaction volume of 20 µl in 30 minutes at 16°C in 1x T4 DNA Ligase reaction Buffer. One unit is equivalent to 0.015 Weiss units.