

cSmart™ cDNA Kits

High stability vectors for cDNA cloning and microarray production

The cSMART™ cDNA Cloning Kits are specifically designed to achieve maximum performance and convenience in cDNA cloning. Incorporating Lucigen's exclusive CloneSmart® Technology, the cSMART Kits include the low-background, transcription/translation-free pSMART® -cDNA vector. The Kits are ideal for cloning individual cDNAs or constructing unbiased, complete cDNA libraries and throughput microarrays.

These are the only cDNA cloning kits that offer:

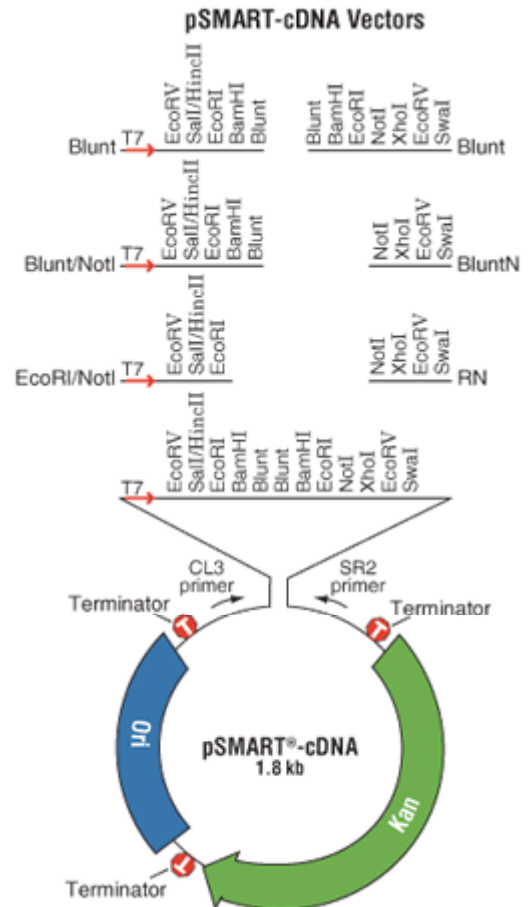
- No cloning bias
- Greater than 99.9% efficiency
- High insert stability
- Stable maintenance of large inserts (15 kb or greater)
- No need to screen colonies

The pSMART-cDNA vector is conveniently pre-cut at a choice of cohesive or blunt restriction sites. The vector contains a T7 promoter to allow in vitro or in vivo transcription in OverExpress™ or E.cloni® EXPRESS cells. The cSMART cDNA Cloning Kits also include CloneSmart DNA Ligase, Sequencing Primers, Controls, a complete protocol, and either E. cloni 10G ELITE Electrocompetent Cells (>2 x 10¹⁰ cfu/μg), 10G SUPREME Electrocompetent Cells (>4 x 10¹⁰cfu/μg), or 10G Chemically Competent Cells (>1 x 10⁹ cfu/μg).

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Advantages

- Complete cDNA insert stability. Unlike all other cDNA cloning vectors, the pSMART cDNA vector eliminates vector-driven transcription/translation of the cDNA insert during the cloning step. As a result, cDNA sequences containing toxic genes, AT- or GC-rich regions, repeats, or extensive secondary structures are stably maintained. Such "difficult" cDNA sequences are often rearranged or deleted using other vectors. In addition, the pSMART-cDNA vector contains a transcription terminator on each side of the cloning site to allow easy cloning of strong promoters.



- More accurate results. Even very difficult cDNA sequences are stable in the pSMART-cDNA vector, eliminating the cloning bias that skews results in traditional cDNA libraries and microarrays. cSMART clones accurately represent the population of input fragments, including clones that seem "unclonable" with other vectors. Nothing is lost in the cloning process.
- Greater flexibility in cDNA cloning. The pSMART-cDNA vector is currently available pre-digested at a choice of 3 different combinations of insertion sites: EcoRI + NotI, blunt + NotI or blunt only. cDNA cloning vectors from other suppliers are available in only one version.
- Inducible transcription. The pSMART-cDNA vector incorporates the T7 promoter upstream of the cloning site to allow in vitro or in vivo transcription.
- Saves time and effort. The pSMART-cDNA vector incorporates CloneSmart Technology, so typically 99.9% of the clones have inserts...a much higher efficiency than is possible with any other cDNA vector. Nearly all recovered colonies contain a DNA insert, so no colony screening is needed.
- Saves money. cSMART cDNA Kits contain all the reagents needed for cloning cDNA or other DNA fragments. cDNA cloning kits from other vendors are much more expensive, in part because they also contain components needed to synthesize the cDNA. However, the enzymes and reagents for cDNA synthesis are commonly available at a low price.

Specifications

- The cSMART cDNA Kit is an extremely efficient way to clone any fragment with ends compatible to those in the pSMART-cDNA cloning site. Large, complex libraries can be generated using the cSMART cDNA Kit. Over 1,000,000 clones per library can be obtained using the reagents and controls supplied in the Kit. A background of 0.1-0.5% is observed using the supplied reagents and controls.
- The copy number of the pSMART-cDNA vector is similar to pUC19, about 300-500 copies per cell. It yields ~ 20-40 ug of plasmid per 1 ml culture.

Applications

- Directional cDNA cloning
- Blunt cDNA cloning
- Construction of cDNA libraries
- Construction of cDNA micro arrays
- Cloning of any DNA with blunt ends or ends compatible with the vector's specified restriction sites

Each cSMART cDNA Kit includes

- pSMART-cDNA vector pre-cut at EcoRI + NotI blunt + NotI, or blunt sites alone
- CloneSmart DNA Ligase
- Sequencing Primers
- Controls
- Complete protocol
- A choice of E. cloni® 10G ELITE (>2 x 10¹⁰ cfu/μg) or SUPREME (>4 x 10¹⁰ cfu/μg) high efficiency electrocompetent cells, or 10G Chemically Competent Cells (>1 x 10⁹ cfu/μg).

Note that the vector in all cSMART cDNA Kits is high copy number with kanamycin selection.

[cSMART cDNA Cloning Kit Manual](#)