

## Product Information

### Plasmid DNA from *Escherichia coli* RR1

Product Codes **D4154** and **D3404**Storage Temperature  $-20\text{ }^{\circ}\text{C}$ 

## TECHNICAL BULLETIN

### Product Description

Product Code	Product Name
D4154	pUC18 Plasmid DNA
D3404	pUC19 Plasmid DNA

pUC18 and pUC19 Plasmids confer resistance to ampicillin and complement defects in  $\beta$ -galactosidase in appropriate host strains (JM83). These plasmids contain an ampicillin resistance gene and a  $\beta$ -galactosidase gene. The multiple cloning site (MCS) for each plasmid is within the  $\beta$ -galactosidase gene and has 13 unique restriction sites. The multiple cloning site regions of pUC18 and pUC19 are identical, but opposite in orientation. They are analogous to those of the corresponding M13 phage.

Foreign DNA inserted at restriction sites within the multiple cloning site results in the loss of  $\beta$ -galactosidase complementation. Lactose-positive, ampicillin-resistant colonies (host strain containing plasmid) form blue colonies on plates containing ampicillin and X-Gal (5-bromo-4-chloro-3-indolyl  $\beta$ -D-galactoside). Lactose-negative, ampicillin-resistant colonies (host strain containing plasmid with foreign DNA inserted at the MCS) form white colonies on this medium.

pUC18 and pUC19 plasmids are isolated from host strain *Escherichia coli* RR1.

Both plasmids are 2,686 base pairs<sup>2,3</sup>  
(MW =  $\sim 1.8 \times 10^6$  Daltons).

#### MCS sites (see Figures 1 and 2):

*Acc* I, *Bam*H I, *Eco*R I, *Hinc* II, *Hind* III, *Kpn* I, *Pst* I, *Sac* I, *Sal* I, *Sma* I, *Sph* I, *Xba* I, *Xma* I

Other unique sites: *Aat* II, *Afl* III, *Dra* II, *Nar* I, *Nde* I, *Ssp* I.

#### Reagents

Each plasmid DNA product is supplied in a solution of 10 mM Tris-HCl, pH 8.0, with 1 mM EDTA.

#### Precautions and Disclaimer

These products are for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Storage/Stability

Store pUC18 and pUC19 Plasmid DNA at or below  $-20\text{ }^{\circ}\text{C}$ .

#### References

- Messing, J., and Vieira, J., A new pair of M13 vectors for selecting either DNA strand of double digest restriction fragments. *Gene*, **19**, 269-276 (1982).
- pUC18 cloning vector sequence, NCBI accession number: L08752.
- pUC19 cloning vector sequence, NCBI accession number: M77789.

**Figure 1.**  
pUC18 Multiple Cloning Site



**Figure 2.**  
pUC19 Multiple Cloning Site



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