

pMOD2-Puro

A plasmid containing a synthetic Puromycin resistance gene

Catalog code: pmod2-puro
<https://www.invivogen.com/pmod2-puro>

For research use only

Version 22C07-MM

PRODUCT INFORMATION

Contents

- 20 µg of lyophilized plasmid DNA

Storage and Stability

- Product is shipped at room temperature.
- Lyophilized DNA should be stored at -20°C.
- Resuspended DNA should be stored at -20°C and is stable at least for 1 year.

Quality control

- Plasmid construct has been confirmed by restriction analysis and full-length open reading frame (ORF) sequencing.
- Plasmid DNA was purified by ion exchange chromatography.

GENERAL PRODUCT USE

pMOD2 plasmids contain genes that have been chemically synthesized. The DNA sequences of these genes were modified by optimizing the codon usage, reducing or eliminating the CpG motifs and avoiding secondary DNA structures without changing the amino acid sequence of the wild type proteins.

pMOD2 may be used to subclone the synthetic gene into another vector. Each synthetic gene is flanked by unique restriction sites allowing convenient excision. Furthermore, two multiple cloning sites (MCS) have been added on both ends of the synthetic gene. They contain several restriction sites that are compatible with many other enzymes, thus facilitating cloning.

METHODS

Plasmid resuspension

Quickly spin the tube containing the lyophilized plasmid to pellet the DNA. To obtain a plasmid solution at 1 µg/µl, resuspend the DNA in 20 µl of sterile water. Store resuspended plasmid at -20°C.

Plasmid amplification and cloning

Plasmid amplification and cloning can be performed in *E. coli* GT116 or other commonly used laboratory *E. coli* strains, such as DH5α.

Ampicillin usage

Ampicillin (not provided) can be used for *E. coli* at 50-100 µg/ml in liquid or solid media..

PLASMID FEATURES

• Multiple cloning sites

MCS1 located upstream of the synthetic gene, contains the following restriction sites:

NdeI, BstEII, AvrII, MfeI, BglII, HindIII, PmeI

MCS2 located downstream of the synthetic gene, contains the following restriction sites:

BamHI, NheI, EcoRV, SacI, PaeI

Each restriction site is compatible with many other enzymes, increasing the cloning options.

• **Synthetic Puromycin resistance gene (Puro-lowCpG):** The *Pac* gene encoding a puromycin N-acetyl-transferase has been isolated from a *Streptomyces* strain. Its expression confers puromycin resistance to pac-transfected cells. The size of the *Pac* gene is small but its CpGs content is very high (93 CpGs for a total of 597 bp). The number of CpG dinucleotides has been reduced to 16 and the codon usage optimized.

• **pMB1 ori** is a minimal *E. coli* origin of replication to limit vector size, but with the same activity as the longer Ori.

• **Amp:** The ampicillin resistance gene allows the selection of transformed *E. coli* carrying a pMOD2 plasmid.

RELATED PRODUCTS

Product	Description	Cat. Code
ChemiComp GT116	Competent <i>E. coli</i>	gt116-11

TECHNICAL SUPPORT

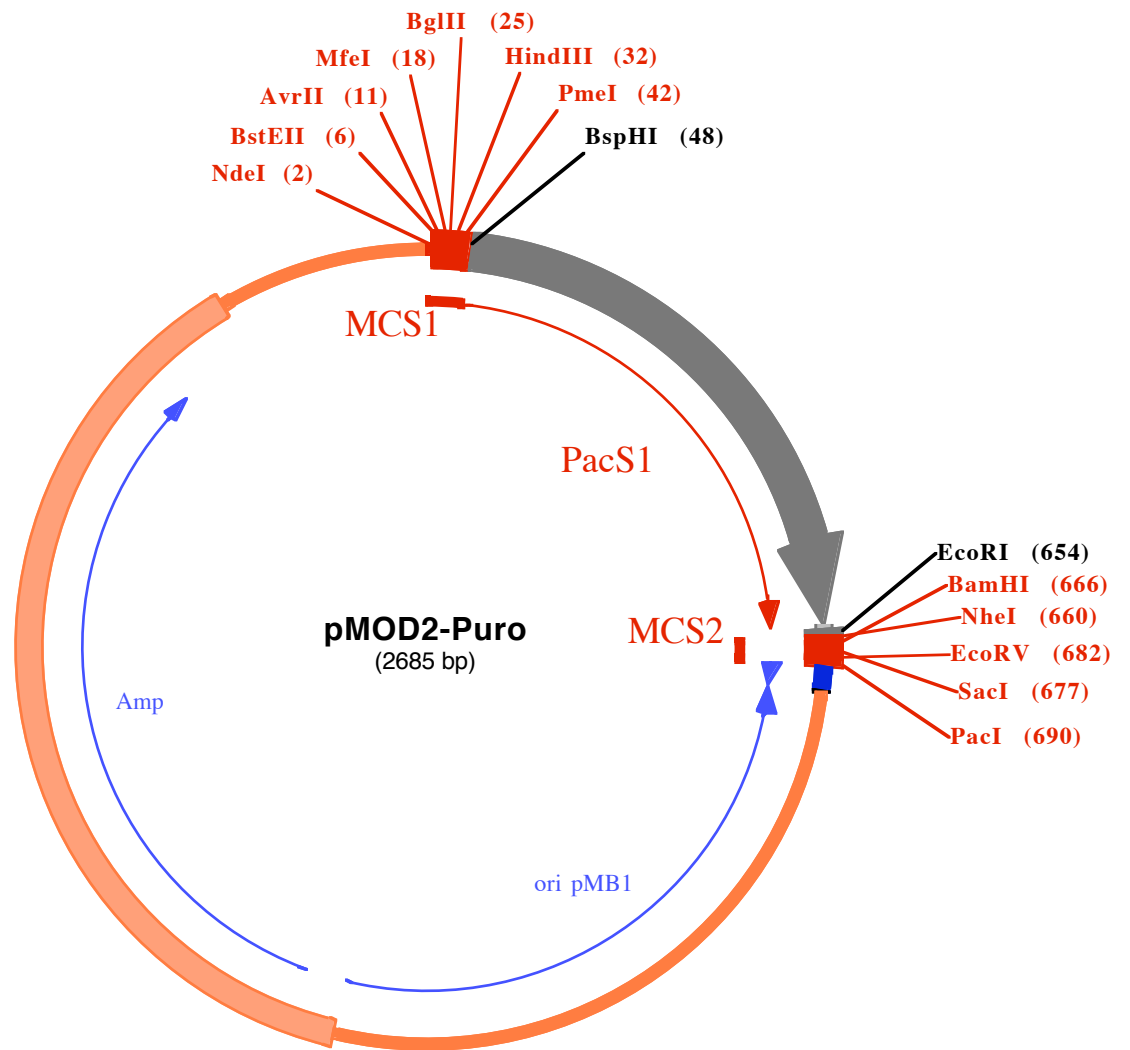
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InvivoGen Europe: +33 (0) 5-62-71-69-39

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GCGCAAACCTATTAAGTGGCGAACTACTTACTCTAGCTTCCCGGCAACAATTAATAGACTGGATGGAGGCGG
▶ R K L L T G E L L T L A S R Q Q L I D W M E A
ATAAAGTTGCAGGACCACTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATTGCTGATAAATCTGGAGCC
▶ D K V A G P L L R S A L P A G W F I A D K S G A
GGTGAAGCGTGGGTCTCGCGGTATCATTGCAGCACTGGGGCCAGATGGTAAGCCCTCCCGTATCGTAGTTAT
▶ G E R G S R G I I A A L G P D G K P S R I V V I
CTACACGACGGGGAGTCAGGCAACTATGGATGAACGAAATAGACAGATCGCTGAGATAGGTGCCTCACTGA
▶ Y T T G S Q A T M D E R N R Q I A E I G A S L
TTAAGCATTGGTAACTGTCAGACCAAGTTTACTCATATATACTTTAGATTGATTTAAAACCTTCATTTTTAA
▶ I K H W •
TTTAAAAGGATCTAGGTGAAGATCCTTTTTGATAATCTCATGCATGACATTAACCTATAAAAAATAGGCGTA
TCACGAGGCCCTTTTCGTCTCGCGGTTTTCGGTGATGACGGTGAAAACCTCTGACACATGCAGCTCCCGGAG
ACGGTCACAGCTTGTCTGTAAGCGGATGCCGGGAGCAGACAAGCCCGTCAGGGCGCGTCAGCGGGTGTGG
CGGGTGTGGGGCTGGCTTAACTATGCGGCATCAGAGCAGATTGTAAGTGGAGTGCAC