General Information

Gene: bone morphogenetic protein 2
Official Symbol: BMP2
Synonym: BMP2A, BMP2
Source: Human
cDNA Size: 1191bp
RefSeq: NM_001200.2
Plasmid: pCMV3-HA-BMP2

Description

Lot: Please refer to the label on the tube

Sequence Description:
Identical with the Gene Bank Ref. ID sequence.

Restriction site: KpnI + XbaI (6kb + 1.21kb)
Vector: pCMV3-SP-N-HA

Shipping carrier:
Each tube contains approximately 10 μg of lyophilized plasmid.

Storage:
The lyophilized plasmid can be stored at ambient temperature for three months.

Quality control:
The plasmid is confirmed by full-length sequencing with primers in the sequencing primer list.

Sequencing primer list:

- pCMV3-F: 5’ CAGGTGTCCACTCCAGGTCAAAG 3’
- pcDNA3-R: 5’ GGCAACTAGAAGGCACAGTCGAGG 3’

Or

- Forward T7: 5’ TAATACGACTCAGTAGGG 3’
- Reverse BGH: 5’ TAGAAGGCACAGTCGAGG 3’

The plasmid is ready for:
• Restriction enzyme digestion
• PCR amplification
• E. coli transformation
• DNA sequencing

E. coli strains for transformation (recommended but not limited)

Most commercially available competent cells are appropriate for the plasmid, e.g. TOP10, DH5α and TOP10F’.

Plasmid Resuspension protocol

1. Centrifuge at 5,000 × g for 5 min.
2. Carefully open the tube and add 100 μl of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin to concentrate the liquid at the bottom. Speed is less than 5000 × g.
5. Store the plasmid at -20 °C.
Human BMP-2 ORF mammalian expression plasmid, N-HA tag

Vector Information

All of the pCMV vectors are designed for high-level stable and transient expression in mammalian hosts. High-level stable and non-replicative transient expression can be carried out in most mammalian cells. The vectors contain the following elements:

- Human enhanced cytomegalovirus immediate-early (CMV) promoter for high-level expression in a wide range of mammalian cells.
- Hygromycin resistance gene for selection of mammalian cell lines.
- A Kozak consensus sequence to enhance mammalian expression.

Physical Map of Plasmid:

```
Vector Name                  pCMV3-SP-N-HA
Vector Size                  6146bp
Vector Type                  Mammalian Expression Vector
Expression Method            Constitutive, Stable / Transient
Promoter                    CMV
AntibioticResistance        Ganciclovir
Selection In Mammalian Cells Hygromycin
Protein Tag                  HA
```
**pCMV3-SP-N-HA** (suitable for secretary and membrane protein expression)

Description

<table>
<thead>
<tr>
<th>Vector Name</th>
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<tr>
<td>Sequencing Primer</td>
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<td></td>
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</tbody>
</table>

**Schematic of pCMV3-SP-N-HA Multiple Cloning Sites**

```
1415  GGTGTCACCTCCAGGCTCTAACTTTAACTTTAATACGACTCCTATAGGGGCCGCCACC
1475  AAGCT  GGT ACC ATGCCACTGTCTCTTCCTGGCTCTCGCTCGCATATAGGGGCCGCC
1535  TAT CCT TAC GAC GTG CCT GAC TAC GCC GGT GGA GGC GGT AGC GCT
1588  GCT AGC GGA TCC GGT AAC CTT AAG ACC GGT GAT ATC ATC GAT TAA A
1620  CCT GAG TCT AGA GGC GGC GGC GAATTC GGG CCC GGT AAA
1667  CGGCTGACGCCCCTGCAGCTGCTGCTTCTA GTTGCGAAGCCACAGTCTGCTGGTC
```

`pCMV3-SP-N-HA` is recommended for constructing the N-HA tag secretary and membrane proteins expression vector which containing a naïve signal peptide. An universal signal peptide is used to instead the naïve signal peptide.