pMAL-p5G Vector

1-800-632-7799
info@neb.com
www.neb.com

N8113S 001111114111

N8113S

10 µg **Lot: 0011111** **Exp: 11/14**
200 µg/ml **Store at –20°C**

Description: The vector pMAL-p5G is designed to produce maltose-binding protein (MBP) fusions, where the protein of interest can be cleaved from MBP with the specific protease Genenase™ I (NEB #P8075).

MBP fusions made with this vector include an N-terminal signal sequence, so the fusion protein is directed to the periplasm. The MBP has been engineered for tighter binding to amylose resin.

Source: NEB 10-beta Competent *E. coli* (pMAL-p5G)

Supplied in 10 mM Tris·HCl, 1 mM EDTA (pH 7.5).

A gene or open reading frame is inserted into a restriction site of the vector polylinker, in the same translational reading frame as the *malE* gene (encoding MBP). The fusion protein produced from the vector can be purified by amylose affinity chromatography. The sequence coding for the five amino acids Pro-Ala-Ala-His-Tyr is present just upstream of the SnaBI site. This allows the protein of interest to be cleaved from MBP with the specific protease Genenase™ I (NEB #P8075).

pMAL-p5G cut with SnaBI produces a blunt end at the tyrosine codon. This allows blunt-end cloning of an insert where the first three nucleotides code for the first amino acid of the protein of interest, and Genenase™ I cleavage of the fusion produces a protein with no vector-derived amino acids.

pMAL-p5G Polylinker:

SacI (TCG AGC TCG) AvaI (CTC GGG)
5´ *malE*...TCG AGC TCG $(AAC)_4$ AAT AAC AAT $(AAC)_3$ CTC GGG

SnaBI (TAC GTA) NdeI (CAT ATG) NcoI (TCC ATG GGC) NotI (GGC GGC CGC) EcoRV (GAT ATC) SalI (GTC GAC) BamHI (GGA TCC)
CCG GGT GCG GCA CAC TAC GTA CAT ATG TCC ATG GGC GGC CGC GAT ATC GTC GAC GGA TCC

EcoRI (GAA TTC) SbfI (CCT GCA GG)
GAA TTC CCT GCA GGT AAT TAA ATA A...

The sequences of the pMAL vectors, as well as other pMAL information, are available on the New England Biolabs web site at www.neb.com or by e-mail from info@neb.com. A detailed map of the closely related vector pMAL-p5X can be found in the appendix of the New England Biolabs Catalog.

Usage Notes: NEB 10-beta Competent *E. coli* (High Efficiency) (NEB #C3019) is recommended for propagation and subcloning. NEB Express Competent *E. coli* (High Efficiency) (NEB #C2523) is recommended for expression using this vector.

References:

1. Guan, C., et al. (1987) *Gene* 67, 21–30.
2. Maina, C.V. et al. (1988) *Gene* 74, 365–373.
3. Nagai, K. and Thogersen, H.C. (1987) *Methods Enzymology* 153, 461–481.
4. Riggs, P.D. (1990). Expression and Purification of Maltose-Binding Protein Fusions. In F.M. Ausebel, R. Brent, R.E. Kingston, D.D. Moore, J.G. Seidman, J.A. Smith and K. Struhl (Eds.), *Current Protocols in Molecular Biology* (pp.16.6.1–16.6.12). New York: John Wiley & Sons, Inc.
5. Carter, P. et al. (1989) Proteins: Structure, Function, and Genetics 6, 240–248.

CERTIFICATE OF ANALYSIS

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5. Carter, P. et al. (1989) Proteins: Structure, Function, and Genetics 6, 240–248.

Notice to Buyer/User: The buyer/user has a non-exclusive license to use the vector for **Research Purposes Only**. Commercial use of this vector requires a license from New England Biolabs, Inc.

U.S. Patent No. 5,643,758

CERTIFICATE OF ANALYSIS