pMAL-c5E Vector

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

N8110S 0011111114111

N8110S

10 µg **Lot: 0011111** **Exp: 11/14**

200 µg/ml **Store at –20°C**

Description: The vector pMAL-c5E is designed to produce maltose-binding protein (MBP) fusions, where the protein of interest can be cleaved from MBP with the specific protease Enterokinase (NEB #P8070).

MBP fusions made with this vector are expressed cytoplasmically. The MBP has been engineered for tighter binding to amylose resin.

Source: NEB 10-beta Competent *E. coli* (pMAL-c5E)

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 Asp-Asp-Asp-Asp-Lys is present just upstream of the KpnI site. This allows the protein of interest to be cleaved from maltose-binding protein with enterokinase.

pMAL-c5E cut with KpnI followed by treatment with the Quick Blunting Kit (NEB #E1201) produces a blunt end at the lysine 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 enterokinase cleavage of the fusion produces a protein with no vector-derived amino acids.

pMAL-c5E Polylinker:

```
                SacI                                          AvaI
5´ malE...TCG AGC TCG (AAC)4 AAT AAC AAT (AAC)3 CTC GGG

                    KpnI   NdeI   NcoI   NotI   EcoRV  SalI   BamHI
GAT GAC GAT GAC AAG GTA CCG CAT ATG TCC ATG GGC GGC CGC GAT ATC GTC GAC GGA TCC

 EcoRI  SbfI
GAA TTC CCT GCA GGT AAT TAA ATA A...
```

The sequences of the pMAL vectors, as well as other pMAL information, are available 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., Li, P., Riggs, P.D. and Inouye, H. (1987) *Gene* 67,21–30.
2. Maina, C.V., Riggs, P.D., Grandea, A.G.III, Slatko, B.E., Moran, L.S., Tagliamonte, J.A., McReynolds, L.A. and Guan, C. (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. La Vallie, E.R. and McCoy, J.M. (1990). Enzymatic and Chemical Cleavage of Fusion Proteins. 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.16.4.10 –16.4.11). New York: John Wiley & Sons, Inc.

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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