SANTA CRUZ BIOTECHNOLOGY, INC.

MBP-probe (P2F1): sc-32747

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Plasmid vectors for the expression of coding regions of eukaryotic genes in bacterial, insect and mammalian hosts are in common usage; such expression vectors frequently encode hybrid fusion proteins consisting in part of prokaryotic and in part, eukaryotic specified proteins. One such system utilizes maltose binding protein (MBP), the 370 amino acid product of the *E. coli* mal E gene. Plasmid vectors have been constructed utilizing the MBP domain that allow the synthesis of high levels of MBP-fusion proteins that can be purified in a one step procedure by affinity chromatography cross linked amylose resin. Once bound to amylose, the MBP protein can then be separated from the target protein by cleavage by coagulation factor Xa at a specific four residue site. Alternatively, the intact fusion protein can be specifically eluted from the resin by the addition of excess free maltose. Subsequent to elution, MBP fusion protein can be visualized either by Western blot analysis or immunoprecipitation using antibodies specific for the MBP-tag. Expression systems utilizing the MBP fusion tag include pCG-806fx and pMal vectors.

REFERENCES

1. Maniattis, T., et al. 1982. Molecular cloning. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.
2. Duplay, P., et al. 1984. Sequences of the malE gene and of its product, the maltose-binding protein of *Escherichia coli* K12. J. Biol. Chem. 259: 10606-10613.
3. di Guan, C., et al. 1988. Vectors that facilitate the expression and purification of foreign peptides in *Escherichia coli* by fusion to maltose-binding protein. Gene 67: 21-30.
4. Smith, D.B., et al. 1988. Single-step purification of polypeptides expressed in *Escherichia coli* as fusions with glutathione S-transferase. Gene 67: 31-40.
5. Maina, C.V., et al. 1988. An *Escherichia coli* vector to express and purify foreign proteins by fusion to and separation from maltose-binding protein. Gene 74: 365-373.
6. Kroll, D.J., et al. 1993. A multifunctional prokaryotic protein expression system: overproduction, affinity purification, and selective detection. DNA Cell Biol. 12: 441-453.

SOURCE

MBP-probe (P2F1) is a mouse monoclonal antibody raised against MOS maltose binding protein fusion protein.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

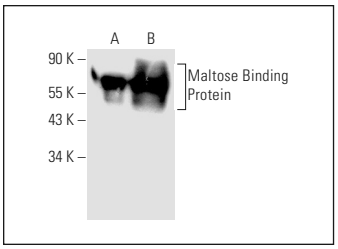
MBP-probe (P2F1) is recommended for detection of MBP fusion proteins by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Molecular Weight of MBP-probe: 40 kDa.

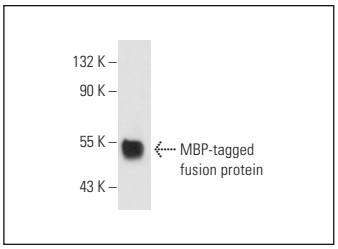
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Maltose Binding Protein (P2F1): sc-32747. Western blot analysis of recombinant Maltose Binding Protein.



MBP-probe (P2F1): sc-32747. Western blot analysis of MBP-tagged fusion protein.

SELECT PRODUCT CITATIONS

1. Gonsberg, A., et al. 2017. The Sec61/SecY complex is inherently deficient in translocating intrinsically disordered proteins. J. Biol. Chem. 292: 21383-21396.
2. Jung, S., et al. 2020. SecY-mediated quality control prevents the translocation of non-gated porins. Sci. Rep. 10: 16347.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.