3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

# Product Information

**Monoclonal Anti-Maltose Binding Protein (MBP)**
**Clone MBP 7G4**
produced in rat, purified immunoglobulin

Catalog Number **SAB4200082**

## Product Description

Monoclonal Anti-Maltose Binding Protein (MBP) (rat IgG2a isotype) is derived from the hybridoma MBP 7G4 produced by the fusion of mouse myeloma cells (P3X63Ag8.653) and splenocytes from rat immunized with MBP-fusion protein.[1] The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti- Maltose Binding Protein (MBP) is specific for MBP. The product may be used in several immunochemical techniques including immunoblotting (~ 42 kDa), ELISA and immunoprecipitation.

Recombinant DNA technology enables the attachment of genes of interest to specific sequences or genes that can provide 'affinity handles' (tags) designed to enable the selective identification and purification of the protein of interest.[1-3] These sequences of tails or tags are genetically engineered away from the protein active site, by insertion at the N- or C-terminus. It has been reported that the addition of a maltose binding protein (MBP) tag creates a stable fusion product that does not appear to interfere with the bioactivity of the protein or with the biodistribution of the MBP tagged product.[4,5] The expression of polypeptides in-frame with maltose binding protein (MBP) allows for their easy purification from bacterial extracts under mild conditions, which employ a single affinity chromatographic step on amylose resin.[4] This system and others based on the expression of fusion proteins utilize a specific protease cleaving site to facilitate correct cleavage of the fusion protein.[3] Thus, the MBP system incorporates a factor Xa cleavage site at the carboxy terminus of the MBP sequence,[5] and cleavage by factor Xa separates MBP from its partner protein. Many recombinant proteins have been engineered with MBP tags to facilitate the detection, isolation and purification of the proteins.[4-6] Monoclonal antibodies recognizing specifically MBP are useful in various immunotechniques for identifying the expression of an MBP fusion protein in bacteria or in cells and tissues transfected with MBP fusion protein expressing vectors.

## Reagent

Solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.
Antibody concentration: ~ 1.0 mg/mL

## Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

## Storage/Stability

Store at –20 °C. For continuous use, the product may be stored at 2-8 °C for up to one month. For extended use, freeze at –20 °C in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify by centrifugation. Working dilution samples should be discarded if not used within 12 hours.

## Product Profile

Immunoblotting: a working antibody concentration of 0.1-0.2 µg/mL is recommended using MBP recombinant protein. The detection limit for MBP recombinant protein is ~0.25 µg/lane under non-reducing and reducing conditions.

**Note**: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

## References

1. Narayanan, S.R., *J. Chromatogr.*, **658**, 237-258 (1994).
2. Casey, J.L., et al., *J. Immunol. Meth.*, **179**, 105-116 (1995).
3. Uhlen, M., and Moks, T., *Meth. Enzymol.*, **185**, 129-143 (1990).
4. Guan, C., et al., *Gene*, **67**, 21-30 (1988).
5. Maina, C.V., et al., *Gene*, **74**, 365-373 (1988).
6. Rodriguez, P.L., and Carrasco, L., *Biotechniques*, **18**, 238-243 (1995).

GG,TD,KAA,PHC 04/10-1