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## Product Information

### MONOCLONAL ANTI- $\beta$ -GALACTOSIDASE CLONE GAL-40 Mouse Ascites Fluid

Product No. **G 6282**

#### Product Description

Monoclonal Anti- $\beta$ -Galactosidase (mouse IgM isotype) is derived from the GAL-40 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse.  $\beta$ -D-Galactosidase purified from *E. coli* was used as the immunogen. The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal Anti- $\beta$ -Galactosidase reacts specifically with native and denatured-reduced *E. coli*  $\beta$ -galactosidase (116 kD) when used in ELISA, dot-blot, immunoblotting and immunocytochemistry. The product may be used for detection of  $\beta$ -galactosidase expressed by *E. coli* lacZ gene encoded in many cloned gene sequences, and serves as an indicator for fusion proteins encoded by an inserted DNA sequence.

Monoclonal Anti- $\beta$ -Galactosidase may be used for the amplification of the signal obtained with primary mouse monoclonal antibodies used in various immunochemical techniques including ELISA, immunohistochemistry and immunoblotting, both by stepwise procedure or the preparation of a  $\beta$ -galactosidase anti- $\beta$ -galactosidase (BGABG) complex. The BGABG complex may be used with other enzyme-labeled antibodies such as peroxidase or peroxidase-anti-peroxidase (PAP) or alkaline phosphatase anti-alkaline phosphatase (APAAP) for double labeling and easy evaluation due to high color contrast.

This antibody may be used for immunoenzymatic staining of blood and bone marrow smears or tissue sections, or as a primary antibody for the detection and purification of recombinant fusion proteins that contain  $\beta$ -galactosidase in the cloning vector.

Eukaryotic genes are often cloned into *E. coli*  $\beta$ -galactosidase (lacZ) gene, resulting in the expression of a desired protein as a fusion hybrid with  $\beta$ -galactosidase.<sup>1,2</sup> Because this fusion protein is

expressed in equimolar ratio to  $\beta$ -galactosidase, assays that determine the presence of the enzyme by using antibodies reacting specifically with  $\beta$ -galactosidase may be used as a means to identify the appropriate gene products in cDNA expression libraries.<sup>3</sup> These antibodies allow a simple isolation of fusion proteins directly from the crude bacterial lysates, using immunoaffinity chromatography<sup>1,4,5</sup> and immunoprecipitation.<sup>3</sup> The product may be used for the immunocytochemical detection of  $\beta$ -galactosidase in cells and tissues that express transfected bacterial lacZ gene.<sup>6</sup>

#### Reagents

The product is provided as ascites fluid with 0.1% sodium azide as a preservative.

#### Precautions

A material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

#### Product Profile

A minimum working dilution of 1:1,000 is determined by indirect immunoblotting using denatured-reduced *E. coli*  $\beta$ -galactosidase.

In order to obtain best results, it is recommended that each individual user determine their optimum working dilutions by titration assay.

#### Storage

For continuous use, store at 2-8 °C for up to one month. For extended storage, solution may be frozen in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify by centrifugation before use.

## References

1. Dráber, P, et al., *Hybridoma*, **11**, 385 (1992).
2. Hayashibe, K., et al., *J. Immunoassay*, **11**, 89 (1990).
3. Shapiro, S., and Kimmel, B., *J. Immunol. Meth.*, **97**, 75 (1987).
4. Gillard-Blass, S., et al., *J. Immunol. Meth.*, **139**, 207 (1991).
5. Nielsen, O., et al., *J. Immunol. Meth.*, **111**, 1 (1988).
6. MacGregor, G., et al., *Somatic Cell Mol. Gen.*, **13**, 253 (1987).

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