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# Product Information

**Anti-Protein A antibody, Mouse monoclonal**
clone SPA-27, purified from hybridoma cell culture

Product Number **SAB4200745**

## Product Description

Anti-Protein A antibody, Mouse monoclonal (mouse IgG1 isotype) is derived from the SPA-27 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from a BALB/c immunized mouse. Protein A from *Staphylococcus aureus* Cowan I strain was used as the immunogen. The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2. The antibody is purified from culture supernatant of hybridoma cells.

Monoclonal Anti-Protein A specifically recognizes Protein A from *Staphylococcus aureus* bacteria. The antibody may be used in various immunochemical techniques including Immunoblotting (~42 kDa)[1-2], Dot Blot[3], ELISA, Immunofluorescence[4], Immunoprecipitation[5] and Flow Cytometry (FACS)[6]. The antibody does not cross react with protein G.

*Staphylococcus aureus* Protein A, also known as SpA or IgG binding protein A, is a 42 kDa single chain polypeptide isolated from the cell wall of *S. aureus* Cowan I strain. It consists of a single polypeptide chain containing five repetitive Immunoglobulin-binding domains, rich in aspartic and glutamic acids.[7] Due to its high affinity to the Fc region of many mammalian immunoglobulins, Protein A is considered to be a universal reagent in biochemistry and immunology studies. It is broadly used for different applications such as immunoglobulins purification by affinity chromatography, cell surface studies, RIA, EIA, and Immunoprecipitation.[8] Protein A can be used either in its native form, conjugated to various markers or serve as a tag for a specific protein of interest.[8]
In general, polyclonal antibodies to protein A have a non-immune Fc binding activity with Protein A. In addition Protein A has low affinity to mouse monoclonal antibodies from IgG1 isotype. Thus, a monoclonal anti-Protein A antibody of the mouse IgG1 isotype has an advantage due to its specific targeting and binding to protein A via its Fab fargment.[9]
Monoclonal Anti-Protein A antibody can serve a useful tool for quantification and visualization of *S. aureus* bacteria and bacterial contaminations in different examined samples and for detection of Protein A-tagged proteins.[1-6]

## Reagent

Supplied as a 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

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

## Product Profile

Indirect ELISA: a working concentration of 0.25–0.5 μg/ml is recommended using 10 μg/mL of protein A from *Staphylococcus aureus* for coating. To reduce nonspecific binding we recommend on detection using a secondary anti-mouse, $F(ab')_2$ fragment antibody.

Immunoprecipitation: a working concentration of 2.5–5 μg/test is recommended using purified protein A from *Staphylococcus aureus*.

**Note**: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

## References

1. Jasavala R., et al., *Mol Cell Proteomics*, **6**, 252-71 (2007).
2. Tiwari A., et al., *J Cell Sci*., **126**, 1962-8 (2013).
3. Li Z., et al., *Proc Natl Acad Sci U S A*, **110**, 5004-9 (2013).

4. Harada-Hada K., et al., *PLoS ONE*, **9**, e98285 (2014).
5. Allton K., et al., *Proc Natl Acad Sci U S A*, **106**, 11612-6 (2009).
6. Nanra JS., et al., *Hum Vaccin Immunother*., **9**, 480-7 (2013).
7. Graille M., et al., *PNAS*, **97**, 5399-404 (2000).
8. Hsu SM and Raine L., *J Histochem Cytochem.*, **29**, 1349-53 (1981).
9. Lindmark R., et al., *J Immunol Methods.*, **62**, 1-13 (1983).

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