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Product Information

Anti-*Porphyromonas gingivalis* LPS antibody
Mouse monoclonal, Clone PG-60
purified from hybridoma cell culture

Product Number **SAB4200834**

Product Description

Monoclonal Anti-*Porphyromonas gingivalis* LPS antibody (mouse IgG2b isotype) is derived from the PG-60 hybridoma, produced by the fusion of mouse myeloma cells and splenocytes from a mouse immunized with lipopolysaccharides (LPS) from *P. gingivalis* as 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-*Porphyromonas gingivalis* LPS specifically recognizes *P*. *gingivalis* whole extract and *P*. *gingivalis* lipopolysaccharides (LPS), the antibody has no cross reactivity with whole extract of *Proteus mirabilis, Proteus vulgaris, E. coli, Pseudomonas aeruginosa, Shigella flexneri, Staphylococcus aureus,* or *Salmonella enterica*. The antibody is recommended to be used in various immunological techniques, including immunoblot and ELISA. Detection of the *P*. *gingivalis* LPS bands by immunoblotting is specifically inhibited by the immunogen.

Porphyromonas gingivalis is a nonmotile, Gram-negative, rod-shaped, anaerobic pathogenic bacterium, belongs to the *Porphyromonadaceae* family, phylum *Bacteroidetes* class.[1] *P. gingivalis* is involved in several pathogenic mechanisms including tissue colonization and destruction, as well as host defense activation.[1-5] This bacterium is known for its ability to colonize at the oral cavity and is associated with public health concern. It can also be found in lung, liver, or splenic abscesses and the upper gastrointestinal tract and is related to atherosclerotic plaque disease, cardiovascular diseases, adverse pregnancy outcomes, rheumatoid arthritis (RA), meningitis, or brain abscesses and Alzheimer's disease.[2-8]

P. gingivalis ability to aggregate in biofilms is considered a significant health risk by elevated resistance to host defense mechanisms and decreased susceptibility to conventional antimicrobials agents.[9] *P. gingivalis* have several potential secreted and membranal virulence factors such as Gingipains proteolytic complex (Rgp and Kgp) which degrade various host proteins, fimbriae (FimA and Mfa1) responsible for attachment of bacterial cells to host cell surfaces, and haemagglutinins (HagA) involved in adhesion and invasion of host cells.[1-10] The host response to *P. gingivalis* infection may involve immunoglobulin degradation, inactivation of cytokines and their receptors, platelet aggregation, attenuation of neutrophil antibacterial activities, and increasing vascular permeability, as well as, prevention of blood clotting.[2]

Extensive study from recent years, examine the influence of *P. gingivalis* LPS and *P. gingivalis* infections on RA disease. The production of citrullinated peptides by *P. gingivalis* virulence factors arginine gingipains (RgpA and RgpB) followed by peptidyl arginine deiminase enzyme (P.PAD) preferentially citrullinates C-terminal arginine result in host autoimmune response and generation of anti-citrullinated antibodies (ACPAs). Furthermore, in animal models *P. gingivalis* infection triggered an experimental autoimmune arthritis.[8,11-12]

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

For R&D use only. Not for drug, household, or other uses. Please consult the 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 are 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
Immunoblotting: a working of concentration 0.12-0.25 μg/mL is recommended using dead *P. gingivalis* bacteria.

Indirect ELISA: a working concentration of 0.12-0.25 μg/mL is recommended using *P. gingivalis* LPS for coating.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration test

References

1. Naito M., et al., *DNA Res.*, 15, 215-25 (2008).
2. Sheets SM., et al., *Front Biosci.*, **13**, 3215-38 (2008).
3. McAlister AD., et al., *J Periodontal Res.*, **44**, 348-53 (2009).
4. Han YW. and Wang X., *J Dent Res.*, **92**, 485-91 (2013).
5. Abdi K., et al., *PLoS One.*, **12**, e0182164 (2017).
6. Yuan X., et al., *Cancer Lett.*, **404**, 1-7 (2017).
7. Asteriou E., et al., *Nutrients.*, **10**, pii: E908 (2018).
8. Harding A., et al., *Front Aging Neurosci.*, **9**, 398 (2017).
9. Gerits E., et al., *J Oral Microbiol.*, **9**, 1300366 (2017).
10. Bélanger M., et al., *Anaerobe.*, **18**, 128-34 (2012).
11. Kharlamova N., et al., *Arthritis Rheumatol.*, **68**, 604-13 (2016).
12. Lopez-Oliva I., et al., *Arthritis Rheumatol.*, **70**, 1008-1013 (2018).

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