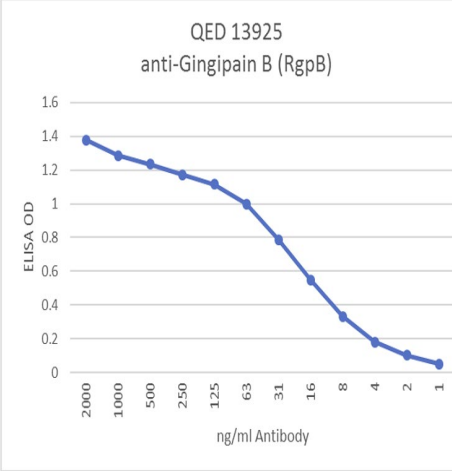
Leinco Technologies, Inc.
excellence in early discovery research™

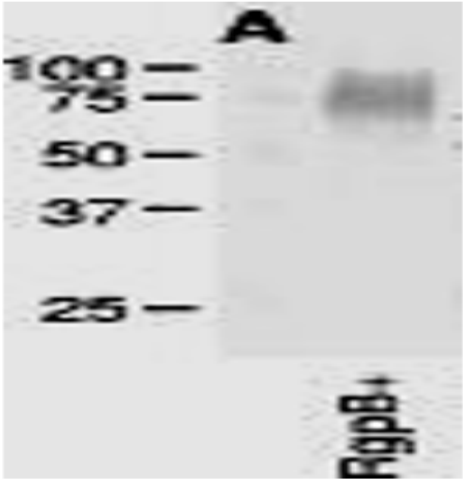
Gingipain B (RgpB) Antibody

Monoclonal Antibody

Product Information

Product No.:	13925
Clone:	18E6.F7
Isotype:	Mouse IgG1
Storage:	-20°C





Product Description

Specificity:

This antibody recognizes a unique epitope within the immunoglobulin (Ig)-like domain of arginine-gingipain (RgpB).

Background:

Leinco Technologies is proud to offer a highly specific Arginine-gingipain B (RgpB) antibody, a crucial tool for cutting-edge research into the intricate links between oral health and systemic diseases, particularly Alzheimer's disease (AD). This advanced antibody empowers researchers to accurately detect and characterize RgpB, a key virulence factor of Porphyromonas gingivalis.

The Critical Role of RgpB in Periodontal Disease

Arginine-gingipain B (RgpB) is a potent cysteine protease produced exclusively by Porphyromonas gingivalis (P. gingivalis), the keystone pathogen in chronic periodontal disease. RgpB plays a central and well-established role in the pathogenicity of P. gingivalis, contributing to tissue destruction and inflammation characteristic of periodontitis. Understanding and targeting RgpB is vital for developing effective diagnostics and therapeutics for this widespread oral infection.

Bridging Oral Health and Neurodegeneration: The RgpB-Alzheimer's Connection

Recent groundbreaking research has illuminated a compelling and increasingly supported association between chronic periodontitis and Alzheimer's disease (AD). This emerging paradigm suggests that P. gingivalis infiltration may be a contributing factor to AD pathology. Studies have revealed the presence of P. gingivalis and its associated gingipains, including RgpB, in autopsy specimens from the brains of individuals diagnosed with AD. These findings are particularly significant as they show direct correlation with hallmark AD pathologies, such as neurons, tau tangles, and beta-amyloid plaques, as well as detection in the cerebrospinal fluid of AD patients.

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Gingipain Inhibitors: A Promising Therapeutic Avenue for Alzheimer's The implications of this research are profound. Compelling preclinical studies have demonstrated that oral administration of gingipain inhibitors to mice with established brain infections by P. gingivalis led to a significant decrease in P. gingivalis DNA in the brain. Furthermore, these inhibitors effectively reduced levels of neurotoxic markers like beta-amyloid and the inflammatory mediator tumor necrosis factor-alpha (TNF-α). These results strongly suggest that targeting gingipains could be a novel and effective therapeutic strategy for AD.

Known Reactivity Species:
Poryphyromonas gingivalis

Format:
Purified

Immunogen:
Arginine-gingipain B (RgpB) from Porphyromonas gingivalis.

Formulation
This monoclonal antibody is formulated in phosphate buffered saline (PBS) pH 7.2 - 7.4 with no carrier protein or preservatives added.

Storage and Stability
This antibody is stable for at least one (1) year at -20°C. Store in appropriate aliquots.
Avoid multiple freeze-thaw cycles.

Product Preparation
Antibodies are purified by a multi-step process including the use of protein A or G to assure extremely low levels of endotoxins, leachable protein A or aggregates.

Country of Origin
USA

References
1) Dominy S et al. 2019. Porphyromonas gingivalis in Alzheimer’s disease brains: Evidence for disease causation and treatment with small-molecule inhibitors. Science Advances 5 (1): eaau3333.
2) Nguyen K-A et al. 2007. Does the importance of the C-terminal residues in the maturation of RgpB from Porphyromonas gingivalis reveal a novel mechanism for protein export in a subgroup of Gram-negative bacteria. J Bacteriol 189: 833-843.

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