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ProductInformation

Monoclonal Anti-Seladin-1
Clone SL-14
produced in mouse, purified immunoglobulin

Catalog Number **S4697**

Product Description

Monoclonal Anti-Seladin-1 (mouse IgG2b isotype) is derived from the hybridoma SL-14 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to amino acids 505-516 of human seladin-1 (Gene ID: 1718) conjugated to KLH. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Seladin-1 reacts specifically with human seladin-1 (~60 kDa). Applications include ELISA, immunoblotting and immunocytochemistry.

Alzheimer's disease (AD) is characterized by a substantial loss of neurons and synapses in selective brain regions, by the generation of intracellular neurofibrillary tangles (NFT), and by extracellular and perivascular deposits of β-amyloid.[1] Severe degeneration of neurons occurs predominantly in selectively vulnerable neuronal populations, especially in brain regions involved in higher cognitive functions, including learning and memory. These are impaired early on in the course of AD. Seladin-1 (SELective Alzheimer's Disease INdicator-1, 60 kDa), is an anti-apoptotic protein, found to be down regulated in large pyramidal neurons in brain regions affected by AD, and to be involved in the regulation of cellular response to oncogenic and oxidative stress.[2-4] Seladin-1 is a human homolog of the Diminuto/Dwarf1 gene described in plants and c. elegans. Seladin-1 is encoded by the DHCR24 (3-β-hydroxysterol-Δ-24-reductase) gene, a flavin-adenine-dinucleotide (FAD)-dependent oxidoreductase, involved in cholesterol homeostasis.[5, 6] It catalyzes the conversion of desmosterol to cholesterol. Disruption of cholesterol homeostasis in neurons is thought to increase cell susceptibility to toxic agents. Seladin-1 is mainly located in the endoplasmic reticulum and has been shown to effectively protect neurons from β-amyloid toxicity and oxidative stress.[2]

In addition, it prevents apoptosis via inhibition of caspase-3, a key mediator of the apoptotic cascade, suggesting that seladin-1 may be involved in the regulation of cell survival and death.

Decreased expression of seladin-1 in specific neurons may be a cause for selective vulnerability in AD. Seladin-1 has been shown to function as a key mediator of Ras-induced senescence in mouse and human fibroblasts. In response to oncogenic and oxidative stress, seladin-1 binds to p53 and displaces the E3 ubiquitin ligase Mdm2 from p53, resulting in accumulation of p53.[4] The expression of seladin-1 has been reported to be up-regulated in adrenocortical adenomas and in some tumours.[7-10]

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: ~2 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 extended storage, 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 the solution by centrifugation before use. Working dilution samples should be discard if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1-2 µg/mL is recommended using extracts of HEK-293T cells expressing human seladin-1.

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

References

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