3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Monoclonal Anti-QPCT, clone QP-2
produced in mouse, purified immunoglobulin

Catalog Number **SAB4200633**

Product Description

Monoclonal Anti-QPCT (mouse IgG2a isotype) is derived from the hybridoma QP-2 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to a sequence at the C-terminal region of human QPCT (GeneID: 25797), conjugated to KLH. The corresponding sequence is identical in monkey, chicken, rat and mouse QPCT. The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Catalog NumberISO2. The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-QPCT recognizes human QPCT. The product may be used in several immunochemical techniques including immunoblotting (~40 kDa), flow cytometry and immunofluorescence. Detection of the QPCT band by immunoblotting is specifically inhibited by the immunizing peptide.

QPCT, also known as Glutaminyl-peptide cyclotransferase, Glutaminyl cyclase or Glutaminyl-tRNA cyclotransferase, is an enzyme highly abundant in mammalian brain, porcine pituitary, and human B lymphocytes.[1-2] It catalyzes the post-translation modification of both glutaminyl precursors into N-terminal pyroglutamate (pGlu) and N-terminal glutamate cyclization.[2] The formation of N-terminal pGlu by QPCT is important for the stability and/or bioactivity of many peptide hormones and proteins, such as, thyrotropin-releasing hormone (TRH), gonadotropin-releasing hormone (GnRH), neurotensin, and fibronectin. QPCT was found to be involved in Alzheimer's Disease (AD) pathogenesis and cognitive decline by QPCT-catalyzed pGlu- amyloid-β (Aβ) formation.[3] Furthermore, it was found to have a role in thyroid carcinomas, while its inhibition was shown to prevent thyroid cancer metastasis.[4] These finding indicate QPCT as an attractive target for drug discovery.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

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 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. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a concentration of 2-4 µg/mL is recommended using whole extracts of SK-Mel-28 cells.

Immunofluorescence: a working concentration of 4-8 µg/mL is recommended using SK-Mel-28 cells.

Flow Cytometry: a working dilution of 5-10 µg /test is recommended using HeLa cells.

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

References

1. Busby, W.H., et al., *J. Biol. Chem.*, **262**, 8532–8536 (1987).
2. Schilling, S., et al., *FEBS Lett.*, **563**, 191-196 (2004).
3. Morawski, M., et al., *J. Alzheimers Dis.,* (2013) DOI 10.3233/JAD-131535 [Epub ahead of print].
4. Kehlen, A., et al., *Endocr. Relat. Cancer,* **18,** 79-90 (2013).

GG,AI,PHC 11/15-1