R&D SYSTEMS
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Human Doc2α Antibody

Monoclonal Mouse IgG_{2B} Clone # 842213

Catalog Number: MAB7904

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Doc2α in ELISAs. In direct ELISAs, no cross-reactivity with recombinant human Doc2β is observed.
Source	Monoclonal Mouse IgG_{2B} Clone # 842213
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant human Doc2α Met1-Lys114 Accession # Q14183
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

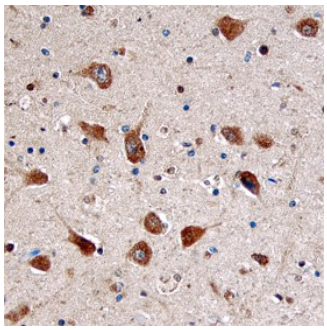
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Immunohistochemistry	8-25 µg/mL	See Below

DATA

Immunohistochemistry



Doc2α in Human Brain. Doc2α was detected in immersion fixed paraffin-embedded sections of human brain (hippocampus) using Mouse Anti-Human Doc2α Monoclonal Antibody (Catalog # MAB7904) at 15 µg/mL overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm of neurons. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

DOC2A/Doc2α (Double C2-like domain containing protein alpha) is a 44 kDa (predicted) monomeric member of the C2 domain-containing protein family of molecules. It is expressed in both neurons and mast cells and appears to serve as an intracellular Ca^{++} sensor protein that regulates secretory vesicle release. In neurons, Doc2α is normally bound to synaptic vesicles and interacts with Munc13-1 to promote secretory vesicle exocytosis through the cell membrane. In mast cells, a similar process occurs that involves Munc13-4 instead of Munc13-1. Human Doc2α is 400 amino acids (aa) in length. It contains a Mid domain (aa 13-37) that binds Munc13-1, followed by one C2 domain that binds Ca^{++} and lipid (aa 91-195) and a second C2 domain that binds SNAP25 (253-356). There is one potential alternative start site 16 aa upstream of the standard site. Over aa 1-114, human Doc2α shares 90% aa sequence identity with mouse Doc2α. Human DOC2B is the product of a separate gene and shares no meaningful aa sequence identity (<30%) with human Doc2α.

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