Human DPP3 Alexa Fluor® 488-conjugated Antibody

Monoclonal Rat IgG_{2B} Clone # 986603

Catalog Number: FAB80872G

100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human DPP3 in direct ELISAs.
Source	Monoclonal Rat IgG_{2B} Clone # 986603
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant human DPP3 Ala2-Ala737 Accession # Q9NY33
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.*

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunocytochemistry	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

DPP3 (DiPeptidyl Peptidase III; also known as Dipeptidyl arylamidase III and Enkephalinase B) is a cytosolic member of the metallopeptidase family of proteins (1, 2). More specifically, it is classified as the singular member of the M49/Clan M- family of enzymes that possesses an unusual six-amino acid, zinc-binding motif (HExxGH) (1, 3). Notably, DPP # 3 is the only DPP that qualifies as a metallopeptidase, as all other DPPs belong to either the cysteine or serine class of peptidases. DPP3 is widely expressed, being found in numerous hematopoietic cells (RBCs, neutrophils, monocytes) and epithelium-dominated tissues (1, 4, 5). Although DPP3 was initially reported to be an Arg-Arg dipeptidase for non-N-terminally substituted peptides, it is now known to be active on a wide range of amino acid combinations, and thus qualifies as a non-specific peptidase. DPP3 does show restriction when it comes to peptide length, however; peptides shorter than three and longer than ten amino acids are very poor substrates for DPP3. Consistent with its broad range of substrates, DPP3 likely has multiple functions. It has been suggested to be a general mediator of peptidome degradation (i.e. the three-to-24 amino acid cytoplasmic fragments that result from initial proteasome degradation), and is considered particularly important in the degradation of proline-containing peptides (1, 6). Conversely, elevated levels of DDP3 activity will reduce the availability of eight-to-ten amino acid length peptides that are used for MHC presentation, adversely affect this crucial immune surveillance activity. DDP3 is also found extracellularly, and has documented activity against angiotensin II-IV and opioids, suggesting a role for DPP3 in both blood pressure regulation and pain modulation (1, 6-8). Finally, DPP3 appears to play a protective role in oxidative stress. Nrf2 is a Zn-finger transcription factor that stimulates antioxidant enzyme production. Normally, it is sequestered in the cytosol through complex formation with Keap I. Though the details are somewhat unclear, under oxidative stress, DPP3 appears to promote the dissociation of Nrf2 and Keap I, directing Nrf2 into the nucleus with subsequent antioxidant enzyme transcription (1). Human DPP3 is 737 amino acids in length, contains a peptidase region over aa 143-705, and is reported to run as a 93-94 kDa protein on SDS-PAGE (2). Although there is no canonical signal sequence, as noted, it is found extracellularly. Potential sites for myristoylation are known and, if utilized, may account for reports of a DPP3 presence in membranes (1). There are potential isoform variants. One shows a deletion of aa 182-601, while another shows a deletion of aa 91-120. Mouse and rat DPP3 share 93% aa sequence identity with human DPP3.

PRODUCT SPECIFIC NOTICES

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