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PDE4A Rabbit pAb

Catalog # AP97993

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	P27815
Other Accession	P27815
Reactivity	Rat
Predicted	Pig, Human, Mouse, Horse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	98143
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human PDE4A
Epitope Specificity	601-700/886
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the cyclic nucleotide phosphodiesterase family. PDE4 subfamily.
SUBUNIT	Isoform 1 interacts with LYN. Isoform 2 and isoform 6 interact weakly with LYN. Isoform 1, isoform 2 and isoform 6 interact with ARRB2.
Post-translational modifications	Phosphorylation by MAPKAPK2 its activation through PKA phosphorylation. Phosphorylated at Ser-686 and Ser-688 when expressed in S.frugiperda cells. Isoform 2 and isoform 7 are activated by phosphorylation at Ser-119 and Ser-123 respectively by PKA. Proteolytically cleaved by caspase-3.
DISEASE	Isoform 1 is widely expressed. Isoform 2 is abundant in liver, stomach, testis, thyroid and adrenal glands. It is also found in placenta, kidney, pancreas, ovary, uterus, skin, monocytes, mast cells, macrophages, as well as in bronchial smooth muscle. Isoform 6 is expressed at high levels in the heart and small intestine. It is also found in the brain, kidney, spleen, colon, salivary gland, ovary and peripheral blood lymphocytes. Isoform 7 is expressed predominantly in skeletal muscle and brain and at lower levels in the testis. Isoform 7 is expressed in the brain. Found in specific neuronal subpopulations in cortex, spinal cord and cerebellum (at protein level).
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Enzymes of the cAMP-dependent phosphodiesterase type 4 (PDE4) family are important in hydrolyzing cAMP produced by G-protein coupled receptor (GPCR) stimulated adenylyl cyclases. In brain, more than 90% of cAMP formed by the stimulation of GPCRs is hydrolyzed by PDE4 enzymes. PDE4 enzymes are also important molecular targets for a variety of therapeutic agents like antidepressants, anti-asthmatics, and anti-inflammatory drugs. PDE4 family comprises 4 genes (PDE4A, B, C and D); each exhibiting multiple isozymes due to alternate splicing that leads to a larger number of distinct PDE4 variants. Members of the PDE4 family are regulated/activated by phosphorylation/dephosphorylation by cAMP-dependent protein kinase A and phosphatases. Protein-protein interactions and cellular trafficking of PDE4A enzymes play an important role in cAMP compartmentalization and cAMP-dependent signaling. In brain members of the PDE4A, B and D family

are associated with GPCRs (adrenergic and dopaminergic) signaling. There are 5 isoforms.

Additional Information

Gene ID	5141
Other Names	DPDE2; PDE4; PDE46; D9Ertd60e; PHOSA; PDE4A_HUMAN; PDE4A; cAMP-specific phosphodiesterase 4A; 3.1.4.53; PDE4A_MOUSE; PDE4A_RAT; phosphodiesterase 4A; phosphodiesterase 4A, cAMP-specific (dunce (Drosophila)-homolog phosphodiesterase E2); phosphodiesterase 4A, cAMP-specific; phosphodiesterase E2 dunce homolog (Drosophila)
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	PDE4A
Synonyms	DPDE2
Function	Hydrolyzes the second messenger 3',5'-cyclic AMP (cAMP), which is a key regulator of many important physiological processes.
Cellular Location	[Isoform 1]: Cytoplasm, perinuclear region [Isoform 3]: Cytoplasm, cytosol [Isoform 6]: Cytoplasm, perinuclear region
Tissue Location	[Isoform 1]: Expressed in lymphoid cell subsets including CD8-positive T cells and T-helper 2 cells. Expressed in dendritic cells. [Isoform 6]: Expressed at high levels in the heart and small intestine. It is also found in the brain, kidney, spleen, colon, salivary gland, ovary and peripheral blood lymphocytes

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.