



Rabbit Anti-PDE4A antibody

SL10140R

Product Name:	PDE4A
Chinese Name:	磷酸二酯酶4A抗体
Alias:	5"-cyclic phosphodiesterase 4A; cAMP specific 3 5 cyclic phosphodiesterase 4A; cAMP specific phosphodiesterase; cAMP-specific 3"; cAMP-specific 3',5'-cyclic phosphodiesterase 4A; DPDE2; dunce like phosphodiesterase E2; PDE 4A; PDE4; PDE46; PDE4A; PDE4A_HUMAN; PDE4A11; Phosphodiesterase 4A; phosphodiesterase 4A cAMP specific; Phosphodiesterase 4A, cAMP-specific (dunce; phosphodiesterase E2 dunce homolog; Phosphodiesterase E2 dunce homolog, Drosophila; phosphodiesterase isozyme 4; phosphodiesterase type 4A11.
Organism Species:	Rabbit
Clonality:	Polyclonal
React Species:	Human,Mouse,Rat,Pig,Cow,Horse,
Applications:	ELISA=1:500-1000IHC-P=1:400-800IHC-F=1:400-800ICC=1:100-500IF=1:100-500 (Paraffin sections need antigen repair) not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight:	98kDa
Cellular localization:	cytoplasmicThe cell membrane
Form:	Lyophilized or Liquid
Concentration:	1mg/ml
immunogen:	KLH conjugated synthetic peptide derived from human PDE4A:601-700/886
Lsotype:	IgG
Purification:	affinity purified by Protein A
Storage Buffer:	0.01M TBS(pH7.4) with 1% BSA, 0.03% Proclin300 and 50% Glycerol.
Storage:	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. 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.
PubMed:	PubMed
Product Detail:	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.

Function:

Hydrolyzes the second messenger cAMP, which is a key regulator of many important physiological processes.

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.

Subcellular Location:

Isoform 1: Cytoplasm, perinuclear region.

Isoform 2: Cytoplasm, perinuclear region. Cell projection, ruffle membrane.

Isoform 4: Membrane; Peripheral membrane protein. Note=Isoform 4 has propensity for association with membranes.

Isoform 6: Cytoplasm, perinuclear region.

Isoform 7: Cytoplasm. Membrane. Note=Predominantly cytoplasmic.

Tissue Specificity:

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).

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).

Similarity:

Belongs to the cyclic nucleotide phosphodiesterase family. PDE4 subfamily.

SWISS:

P27815

Gene ID:

5141

Database links:

[Entrez Gene: 5141](#)Human

[Entrez Gene: 18577](#)Mouse

[Entrez Gene: 25638](#)Rat

[Omim: 600126](#)Human

[SwissProt: P27815](#)Human

[SwissProt: O89084](#)Mouse

[SwissProt: P54748](#)Rat

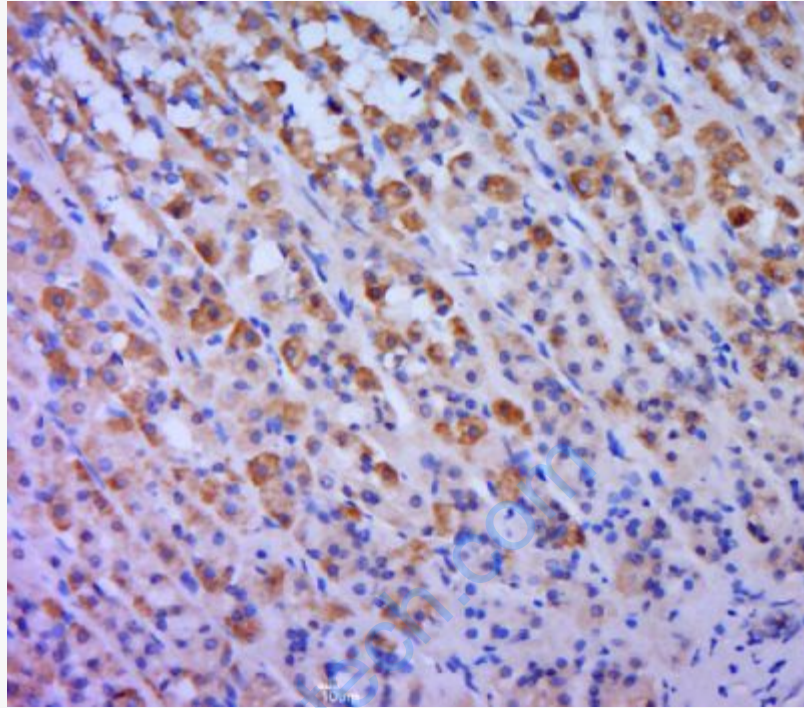
[Unigene: 89901](#)Human

[Unigene: 191749](#)Mouse

[Unigene: 91357](#)Rat

Important Note:

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.



Picture:

Paraformaldehyde-fixed, paraffin embedded (rat stomach tissue); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (PDE4A) Polyclonal Antibody, Unconjugated (SL10140R) at 1:400 overnight at 4°C, followed by a conjugated secondary (sp-0023) for 20 minutes and DAB staining.