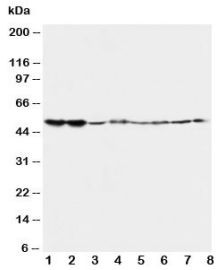
5HT2A Receptor Antibody (R30442)

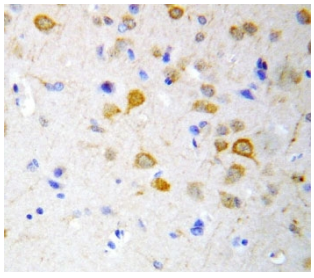
Catalog No.	Formulation	Size
R30442	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide/thimerosal
UniProt	P28223
Localization	Cytoplasmic, membrane
Applications	Western Blot : 0.5-1ug/ml IHC (FFPE) : 0.5-1ug/ml
Limitations	This 5HT2A Receptor antibody is available for research use only.



Western blot analysis of 5HT2A Receptor antibody in rat, mouse, and human samples. Lane 1: rat brain lysate, Lane 2: rat brain lysate, Lane 3: mouse brain lysate, Lane 4: mouse brain lysate, Lane 5: human U87 cell lysate, Lane 6: human SMMC-7721 cell lysate, Lane 7: human HT1080 cell lysate, Lane 8: human COLO320 cell lysate. A band is detected at approximately 53 kDa, consistent with the predicted molecular weight of 5-hydroxytryptamine receptor 2A / HTR2A, with stronger signal observed in brain lysates, aligning with the known neuronal enrichment of this serotonin receptor.



IHC-P: 5HT2A Receptor antibody testing of rat brain tissue

Description

5HT2A Receptor antibody recognizes 5-hydroxytryptamine receptor 2A, a G protein-coupled receptor commonly referred to as serotonin receptor 2A or HTR2A. The HTR2A gene is located on chromosome 13q14-q21 and encodes a seven-transmembrane domain receptor that mediates many of the central and peripheral effects of serotonin. 5HT2A Receptor antibody targets a membrane-associated receptor that is widely studied in neuroscience, psychiatry, and vascular biology due to its role in signal transduction downstream of serotonin binding.

5-hydroxytryptamine receptor 2A belongs to the class A rhodopsin-like GPCR family and primarily couples to Gq/11 proteins. Upon ligand binding, the receptor activates phospholipase C, leading to inositol trisphosphate and diacylglycerol production, intracellular calcium mobilization, and protein kinase C activation. Through these pathways, HTR2A regulates neuronal excitability, synaptic plasticity, and transcriptional responses. In the central nervous system, it is highly expressed in cortical pyramidal neurons, particularly in the prefrontal cortex, as well as in other brain regions including the claustrum and hippocampus. Peripheral expression has been described in platelets, vascular smooth muscle, and certain immune cell populations.

Functionally, serotonin receptor 2A plays an essential role in mood regulation, cognition, perception, and sleep architecture. It is a principal molecular target of several antipsychotic and antidepressant agents, and it also mediates the psychoactive effects of classic serotonergic hallucinogens. Genetic and pharmacological studies have linked HTR2A variation or altered signaling to schizophrenia, major depressive disorder, anxiety disorders, and migraine susceptibility. In vascular tissues, activation of the receptor contributes to smooth muscle contraction and modulation of blood pressure.

At the cellular level, 5HT2A Receptor antibody detects a receptor localized primarily to the plasma membrane, although ligand stimulation can promote receptor internalization and trafficking through endosomal compartments. Post-translational modifications such as phosphorylation regulate receptor desensitization and beta-arrestin-mediated signaling. Alternative splicing variants of HTR2A have been reported, which may influence receptor distribution or signaling bias in specific tissues. Due to its central role in serotonergic neurotransmission and neuropsychiatric disease biology, 5HT2A Receptor antibody supports research applications focused on GPCR signaling, receptor pharmacology, and brain tissue expression analysis.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the 5HT2A Receptor antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

An amino acid sequence from the C-terminus of human 5HT2A Receptor (AYKSSQLQMGQKKNS) was used as the immunogen for this 5HT2A Receptor antibody.

Storage

After reconstitution, the 5HT2A Receptor antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.