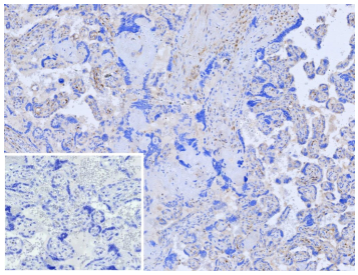
CHAT Antibody / Choline O-acetyltransferase [clone r38B12] (V5856)

Catalog No.	Formulation	Size
V5856-100UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V5856-20UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug
V5856SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

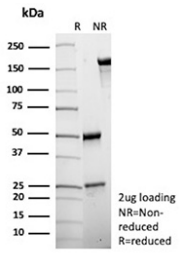
Recombinant MOUSE MONOCLONAL

Bulk quote request

Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Recombinant Mouse Monoclonal
Isotype	Mouse IgG1, kappa
Clone Name	r38B12
UniProt	P28329
Localization	Cytoplasm, Nucleus, Synapse
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml
Limitations	This CHAT/Choline O-acetyltransferase antibody is available for research use only.



Immunohistochemistry analysis of formalin-fixed, paraffin-embedded human placenta tissue using CHAT antibody (clone r38B12). Weak to moderate cytoplasmic staining is observed in scattered placental cells, with minimal background signal in surrounding stromal regions. Nuclei are counterstained in blue. Inset shows PBS substituted for the primary antibody as a secondary-only negative control. Heat-induced antigen retrieval was performed by heating tissue sections in 10 mM Tris with 1 mM EDTA, pH 9.0, for 45 minutes at 95oC, followed by cooling at room temperature for 20 minutes.



SDS-PAGE Analysis of Purified CHAT/Choline O-acetyltransferase antibody (clone r38B12). Confirmation of Purity and Integrity of Antibody.

Description

CHAT antibody targets Choline O-acetyltransferase, a cytoplasmic enzyme encoded by the CHAT gene that catalyzes the biosynthesis of the neurotransmitter acetylcholine from choline and acetyl-CoA. Choline O-acetyltransferase is the defining molecular marker of cholinergic neurons and plays a central role in cholinergic neurotransmission throughout the central and peripheral nervous systems. Expression of CHAT is tightly associated with neuronal populations involved in motor control, autonomic regulation, and cognitive processing, including basal forebrain neurons, brainstem nuclei, spinal motor neurons, and autonomic ganglia. As a result, CHAT antibody is widely used in research focused on identifying cholinergic cell populations and mapping acetylcholine-related signaling pathways.

Choline O-acetyltransferase is localized primarily in the cytoplasm, where it associates with synaptic vesicle transport and acetylcholine synthesis machinery. The enzyme belongs to the ChAT family and exhibits conserved structural domains required for acetyl-CoA binding and catalytic activity. In addition to classical neuronal expression, Choline O-acetyltransferase has been reported in non-neuronal cell types, including epithelial cells, immune cells, and certain endocrine tissues, supporting the concept of non-neuronal acetylcholine production. These findings have expanded interest in CHAT expression beyond the nervous system, particularly in studies of cell communication, epithelial biology, and immune modulation. Clone r38B12 is designed to recognize Choline O-acetyltransferase for research use in studies examining cholinergic identity and acetylcholine biosynthesis.

Altered expression or activity of Choline O-acetyltransferase has been implicated in a range of neurological and neuromuscular disorders. Reduced CHAT expression is a hallmark feature observed in neurodegenerative diseases such as Alzheimer disease and amyotrophic lateral sclerosis, while changes in cholinergic signaling have also been linked to Parkinson disease and cognitive impairment. In developmental contexts, CHAT expression is critical for proper neuromuscular junction formation and motor neuron maturation. Beyond neurological disease, dysregulated cholinergic signaling has been explored in inflammation, cancer biology, and tissue homeostasis, reflecting the diverse roles of acetylcholine as a signaling molecule. Clone r38B12 provides a research tool for investigating Choline O-acetyltransferase expression and distribution in experimental systems relevant to neuronal function, development, and disease-associated cholinergic pathways.

Application Notes

1. Optimal dilution of the CHAT/Choline O-acetyltransferase antibody should be determined by the researcher.

2. This CHAT/Choline O-acetyltransferase antibody is recombinantly produced by expression in CHO cells.

Immunogen

Prokaryotic recombinant protein corresponding to the C-terminal region of the human ChAT molecule was used as the immunogen for the CHAT/Choline O-acetyltransferase antibody.

Storage

CHAT/Choline O-acetyltransferase antibody with sodium azide - store at 2 to 8oC; antibody without sodium azide - store at -20 to -80oC.