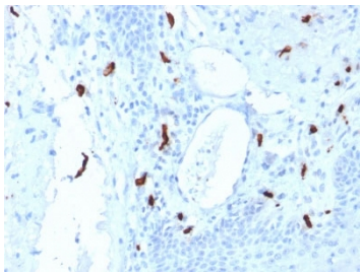
TPSAB1 Antibody / Mast Cell Tryptase [clone TPSAB1/1961] (V3944)

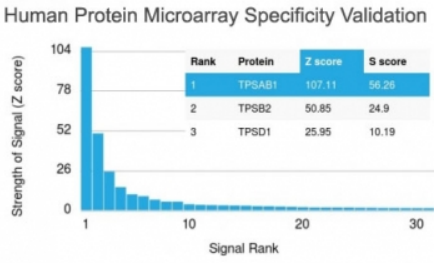
Catalog No.	Formulation	Size
V3944-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3944-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3944SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

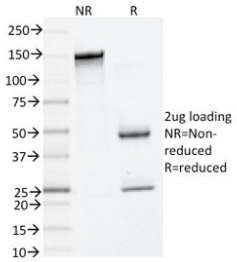
Species Reactivity	Human
Format	Purified
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	TPSAB1/1961
Purity	Protein G affinity chromatography
UniProt	Q15661
Localization	Cytoplasmic, secreted
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This TPSAB1 antibody is available for research use only.



IHC testing of FFPE human tonsil tissue with TPSAB1 antibody (clone TPSAB1/1961). HIER: boil tissue sections in pH6, 10mM citrate buffer, for 10-20 min followed by cooling at RT for 20 min.



Analysis of HuProt(TM) microarray containing more than 19,000 full-length human proteins using TPSAB1 antibody (clone TPSAB1/1961). These results demonstrate the foremost specificity of the TPSAB1/1961 mAb.
Z- and S- score: The Z-score represents the strength of a signal that an antibody (in combination with a fluorescently-tagged anti-IgG secondary Ab) produces when binding to a particular protein on the HuProt(TM) array. Z-scores are described in units of standard deviations (SD's) above the mean value of all signals generated on that array. If the targets on the HuProt(TM) are arranged in descending order of the Z-score, the S-score is the difference (also in units of SD's) between the Z-scores. The S-score therefore represents the relative target specificity of an Ab to its intended target.



SDS-PAGE analysis of purified, BSA-free TPSAB1 antibody (clone TPSAB1/1961) as confirmation of integrity and purity.

Description

TPSAB1 antibody detects Tryptase alpha/beta-1, a serine protease primarily stored in the secretory granules of mast cells and basophils. The UniProt recommended name is Tryptase alpha/beta-1 (TPSAB1). This enzyme is a major component of mast cell granules and plays a central role in allergic inflammation, immune response, and tissue remodeling.

Functionally, TPSAB1 antibody identifies a 275-amino-acid glycoprotein that exists as a tetramer stabilized by heparin proteoglycans within secretory granules. Upon mast cell activation and degranulation, TPSAB1 is released into the extracellular space, where it cleaves a variety of substrates including vasoactive peptides, cytokines, and extracellular matrix proteins. Tryptase activity promotes vascular permeability, smooth muscle contraction, and leukocyte recruitment, amplifying allergic and inflammatory reactions. It also influences tissue repair by activating protease-activated receptors (PAR-2) on fibroblasts and epithelial cells, stimulating proliferation and cytokine release.

The TPSAB1 gene is located on chromosome 16p13.3 within a cluster of tryptase genes, including TPSB2 and TPSG1. Expression is restricted to mast cells, basophils, and some myeloid precursors. The gene produces both alpha and beta isoforms of tryptase through alternative splicing and allelic variation, contributing to individual differences in mast cell activity and allergic sensitivity.

Clinically, elevated tryptase levels are a biomarker for mast cell activation and are used in diagnosing anaphylaxis, mastocytosis, and allergic asthma. Genetic duplications or high-expression variants of TPSAB1 are associated with hereditary alpha-tryptasemia, a condition characterized by elevated baseline tryptase and connective tissue symptoms. Research using TPSAB1 antibody supports studies in allergy mechanisms, mast cell biology, and protease-mediated inflammation.

TPSAB1 antibody is validated for use in relevant research applications to detect mast cell tryptase expression and study its role in allergic and inflammatory processes. NSJ Bioreagents provides TPSAB1 antibody reagents optimized for research in allergy, immunology, and inflammatory signaling pathways.

Application Notes

Optimal dilution of the TPSAB1 antibody should be determined by the researcher.

Immunogen

A portion of amino acids 115-233 from the human protein was used as the immunogen for this TPSAB1 antibody.

Storage

Store the TPSAB1 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).