

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived mouse VSTM4 protein Leu24-Tyr179, with C-terminal 6-His tag Accession # T1NXB5
N-terminal Sequence Analysis	Leu24
Predicted Molecular Mass	20 kDa

SPECIFICATIONS

SDS-PAGE	30-44 kDa, under reducing conditions
Activity	Measured by its ability to inhibit anti-CD3 antibody induced IL-2 or IFN-gamma secretion by human T cells. The ED ₅₀ for this effect is 0.5-5 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

Bioactivity

Recombinant Mouse VSTM4 (µg/mL)	Mean OD
1	0.60
2	0.58
5	0.52
10	0.45
20	0.38
50	0.32
100	0.28
200	0.25
500	0.23
1000	0.22

Recombinant Mouse VSTM4 (Catalog # 10210-VT) inhibits anti-CD3 antibody-induced IL-2 secretion in human T lymphocytes. The ED₅₀ for this effect is 0.5-5 µg/mL.

SDS-PAGE

2 µg/lane of Recombinant Mouse VSTM4 His-tag (Catalog # 10210-VT) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 30-44 kDa.

BACKGROUND

V-set and transmembrane domain-containing protein 4 (VSTM4) is a single-pass type I membrane protein in the immunoglobulin superfamily. Mouse VSTM4 is synthesized as a 319 amino acid (aa) precursor that contains a 23 aa signal sequence, a 156 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 119 aa cytoplasmic tail. In humans, part of the extracellular region is cleaved into a 50 aa secreted peptide (aa 55-104) compared to mouse, which is cleaved into a 49 aa peptide (aa 55-103) (1). Because of its role in enhancing L-type voltage-gated calcium channel (L-VGCC) currents in photoreceptors, this peptide was named peptide Lv (1). Peptide Lv is expressed in the central nervous system and a variety of organs including spleen, intestine, retina, and lung (1, 2). The peptide may have possible roles in regulating the cardiovascular system and L-VGCC dependent neural plasticity (1, 2). Human VSTM4 gene is located on chromosome 10, which may be linked to late-onset Alzheimer's disease (3). Down-regulation of VSTM4 increased tamoxifen sensitivity and suppressed growth in cultured breast cancer cells (4). Within the ECD, mouse VSTM4 shares 87% and 96% aa sequence identity with human and rat VSTM4, respectively. The biological functions of VSTM4 remain unknown. Our in-house data show that mouse VSTM4 inhibits anti-CD3 induced IL-2 secretion by Human T Cells.

References:

1. Shi, L. *et al.* (2012) PLoS. **7**:e43091.
2. Shi, L. *et al.* (2015) Biochim. Biophys. Acta. **1853**:1154.
3. Grupe, A. *et al.* (2006) Am. J. Hum. Genet. **78**:78.
4. Mendes-Pereira, A. *et al.* (2012) Proc. Natl. Acad. Sci. **109**:2730.