

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human VSTM4 in direct ELISAs.
Source	Recombinant Monoclonal Rabbit IgG Clone # 2694A
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Chinese Hamster Ovary cell line CHO-derived human VSTM4 Leu24-Tyr180 Accession # Q8IW00-1
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 µg/10 ⁶ cells	HEK293 Human Cell Line Transfected with Human VSTM4 and eGFP

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

V-set and transmembrane domain-containing protein 4 (VSTM4) is a single-pass type I membrane protein in the immunoglobulin superfamily. Human VSTM4 is synthesized as a 320 amino acid (aa) precursor that contains a 23 aa signal sequence, 157 aa extracellular region, 21 aa TM domain, and 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, human VSTM4 shares 87% and 85% aa sequence identity with mouse and rat VSTM4, respectively. The biological functions of VSTM4 remain unknown. Our in-house data show that VSTM4 inhibits the human T cell activation, including anti-CD3 induced IL-2 and IFN-γ secretion, and T cell proliferation.

References:

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

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