

**DESCRIPTION**

**Source** Chinese Hamster Ovary cell line, CHO-derived human VSTM4 protein  
Leu24-Tyr180  
Accession # Q8IW00-1

**N-terminal Sequence Analysis** Leu24

**Structure / Form** Disulfide-linked homodimer

**Predicted Molecular Mass** 45 kDa

**SPECIFICATIONS**

**SDS-PAGE** 58-74 kDa, reducing conditions

**Activity** Measured by its ability to inhibit anti-CD3 antibody induced IFN-gamma secretion by human peripheral blood mononuclear cells (PBMC). The ED<sub>50</sub> for this effect is 1-10 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**

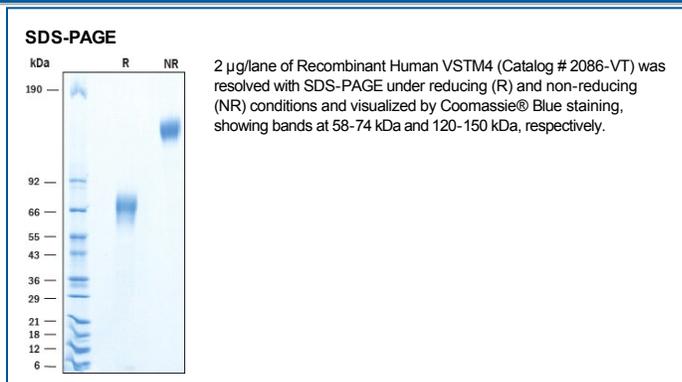
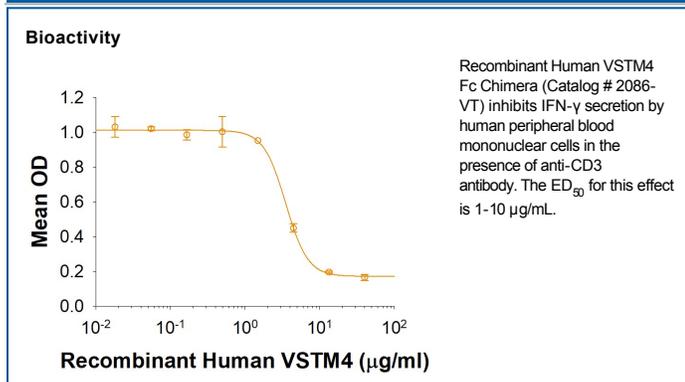
**Reconstitution** Reconstitute at 200 µg/mL in PBS.

**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage**

- 12 months from date of receipt, ≤ -20 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, ≤ -20 °C under sterile conditions after reconstitution.

**DATA**



**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:**

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.