

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CRTAM in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse CRTAM is observed.
Source	Monoclonal Mouse IgG _{2B} Clone # 210213
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human CRTAM Ser18-Ser286 Accession # O95727
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

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
Western Blot	1 µg/mL	Recombinant Human CRTAM Fc Chimera (Catalog # 1695-CR)
Flow Cytometry	2.5 µg/10 ⁶ cells	Human CD8 ⁺ T cells treated with PMA, Ca ²⁺ and ionomycin
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <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. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

CRTAM (Class I-restricted T cell-associated molecule) is a nectin family member of the immunoglobulin superfamily that is expressed by activated CD8⁺ and NK T cells (1-4). NK activation receptor engagement, but not cytokines, also induce NK CRTAM expression (4, 5). CRTAM is found in spleen, thymus, small intestine, peripheral blood, and surprisingly, in brain where it is highly expressed by Purkinje cells of the cerebellum (1, 2). Human CRTAM is a 393 amino acid (aa), 80 kDa type I transmembrane glycoprotein with a 17 aa signal sequence, a 269 aa extracellular domain (ECD), a 21 aa transmembrane segment and an 84 aa cytoplasmic domain. The ECD has one V-type and one C1-type Ig-like domain, while the cytoplasmic region shows a potential class I PDZ domain (1-5). Human CRTAM ECD shows 70%, 43% and 63% aa identity with mouse, rat and canine CRTAM ECD, respectively, but 73-78% aa identity within the Ig-like domains. The V-type Ig-like domain mediates interaction with the corresponding domain on another nectin family member, IGSF4 (also called TSLC-1, Nect-2, Syncam or SgIGSF) (4, 5). CRTAM is a homodimer on the cell surface but does not show homotypic binding *in trans* (3-5). The high affinity of CRTAM/IGSF4 adhesion allows CRTAM to disrupt IGSF4 homotypic interactions (3-5). IGSF4 and T cell receptor co-engagement of CRTAM-expressing CD8⁺ cells induces increased IFN-γ or IL-22 production (3, 4). A role in cancer surveillance through NK cell-mediated rejection of IGSF4-expressing tumors has been proposed (3-5). IGSF4 is expressed broadly, including on epithelia, neurons, a subset of tonsillar B cells (4, 5), and a rare splenic T zone-restricted BCDA3⁺ dendritic cell population which interacts with CRTAM (3).

References:

1. Kennedy, J. *et al.* (2000) *J. Leukoc. Biol.* **67**:725.
2. Patino-Lopez, G. *et al.* (2006) *J. Neuroimmunol.* **171**:145.
3. Galibert, L. *et al.* (2005) *J. Biol. Chem.* **280**:21955.
4. Boles, K. S. *et al.* (2005) *Blood* **106**:779.
5. Arase, N. *et al.* (2005) *Int. Immunol.* **17**:1227.