

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived human ERMAP protein His30-Ala155, with a C-terminal 6-His tag Accession # Q96PL5.1
N-terminal Sequence Analysis	His30
Predicted Molecular Mass	15 kDa

SPECIFICATIONS

SDS-PAGE	11-17 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 0.2-4 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	<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

Measured by its ability to inhibit anti-CD3 antibody induced IL-2 secretion by human T cells. The ED₅₀ for this effect is 0.2-4 µg/mL.

SDS-PAGE

2 µg/lane of Recombinant Human ERMAP His-tag (Catalog # 10650-ER) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 11-17 kDa.

BACKGROUND

Erythroid membrane-associated protein (ERMAP), also called Scianna blood group antigen, is a member of the butrophilin (BTN) and butrophilin-like (BTNL) family within the immunoglobulin superfamily. ERMAP consists of an extracellular domain (ECD) with one V-type Ig-like (IgV) fold, a transmembrane segment, and a cytoplasmic domain with a B30.2 motif (1). Within the ECD, human ERMAP shares 33% and 31% amino acid sequence identity with mouse and rat ERMAP, respectively. Interestingly, human ERMAP contains a single IgV-like domain in the ECD, while mouse and rat ERMAP contain both an IgV-like and IgC-like domain. However, the absence of the IgC-like domain in human ERMAP does not seem to affect its functions (2, 3). ERMAP is an adhesion receptor molecule highly expressed in erythroid tissues, on the cell surface of resting and activated antigen-presenting cells (APCs) and in some tumor tissues (1, 4, 5). Fusion proteins (ERMAP-Ig) of both human and mouse ERMAP inhibit T cell functions in vitro and administration of the fusion protein ameliorates autoimmune diseases, including experimental autoimmune encephalomyelitis and type 1 diabetes, in mice (5). ERMAP acts as a novel inhibitory molecule for T cells and macrophages (5).

References:

1. Xu, H. *et al.* (2001) *Genomics* **76**:2.
2. Compte, E.W. *et al.* (2004) *Eur. J. Immunol.* **34**:2089.
3. Su, Y.Y. *et al.* (2001) *Blood Cell Mol. Dis.* **27**:938
4. Abeler-Dorner, L. *et al.* (2012) *Trends Immunol.* **33**:34.
5. Su, M. *et al.* (2020) *Cell. Mol. Immunol.* doi: 10.1038/s41423-020-0494-8.