

Background

Fas Ligand (FasL), also known as CD178, CD95L, or TNFSF6, is a 40 kDa type II transmembrane member of the TNF superfamily of proteins. Its ability to induce apoptosis in target cells plays an important role in the development, homeostasis, and function of the immune system (1). Mature mouse Fas Ligand consists of a 179 amino acid (aa) extracellular domain (ECD), a 22 aa transmembrane segment, and a 78 aa cytoplasmic domain (2). Within the ECD, mouse Fas Ligand shares 81% and 93% aa sequence identity with human and rat Fas Ligand, respectively. Alternate splicing generates a 16 kDa isoform that corresponds to the C-terminal 69 amino acids of the ECD (3). Both mouse and human Fas Ligand are active on mouse and human cells (4, 5). Fas Ligand is expressed as a non-disulfide-linked homotrimer on activated CD4+ Th1 cells, CD8+ cytotoxic T cells, and NK cells (1). Fas Ligand binding to Fas/CD95 on an adjacent cell triggers apoptosis in the Fas-expressing cell (2, 4). Fas Ligand also binds DcR3 which is a soluble decoy receptor that interferes with Fas Ligand-induced apoptosis (6). Fas Ligand can be released from the cell surface by metalloproteinases as a 26 kDa soluble molecule which remains trimeric (7, 8). Shed Fas Ligand retains the ability to bind Fas, although its ability to trigger apoptosis is dramatically reduced (7, 8). In the absence of TGF- β , however, Fas Ligand/Fas interactions instead promote neutrophil-mediated inflammatory responses (5, 9). Fas Ligand itself transmits reverse signals that costimulate the proliferation of freshly antigen-stimulated T cells (10). Fas Ligand-induced apoptosis plays a central role in the development of immune tolerance and the maintenance of immune privileged sites (11). This function is exploited by tumor cells which evade immune surveillance by upregulating Fas Ligand to kill tumor infiltrating lymphocytes (9, 12). In gld mice, a Fas Ligand point mutation is the cause of severe lymphoproliferation and systemic autoimmunity (13, 14).

References:

1. Lettau, M. *et al.* (2008) *Curr. Med. Chem.* **15**:1684.
2. Suda, T. *et al.* (1993) *Cell* **75**:1169.
3. Ayroldi, E. *et al.* (1999) *Blood* **94**:3456.
4. Takahashi, T. *et al.* (1994) *Int. Immunol.* **6**:1567.
5. Seino, K-I. *et al.* (1998) *J. Immunol.* **161**:4484.
6. Pitti, R.M. *et al.* (1998) *Nature* **396**:699.
7. Schneider, P. *et al.* (1998) *J. Exp. Med.* **187**:1205.
8. Tanaka, M. *et al.* (1998) *Nature Med.* **4**:31.
9. Chen, J.-J. *et al.* (1998) *Science* **282**:1714.
10. Suzuki, I. and P.J. Fink (2000) *Proc. Natl. Acad. Sci.* **97**:1707.
11. Ferguson, T.A. and T.S. Griffith (2006) *Immunol. Rev.* **213**:228.
12. Ryan, A.E. *et al.* (2005) *Cancer Res.* **65**:9817.
13. Takahashi, T. *et al.* (1994) *Cell* **76**:969.
14. Lynch, D.H. *et al.* (1994) *Immunity* **1**:131.

Description

Source	Chinese Hamster Ovary cell line, CHO-derived			
	YPYDVDPDYA	GCN4-IZ (Met1 - Ile29)	(GGGS) ₃	Mouse Fas Ligand (Gln101 - Leu279) Accession # P41047
	N-terminus			C-terminus
N-terminal Sequence Tyrosine Analysis				
Predicted Molecular Mass	25.9 kDa (monomer)			

Specifications

SDS-PAGE	40 - 55 kDa, reducing conditions
Activity	Measured by its ability to induce apoptosis of Jurkat human leukemic T cells. The ED ₅₀ for this effect is typically 1 - 8 ng/mL in the presence of 2.5 μ g/mL of a cross-linking antibody mouse anti-HA.
Endotoxin Level	<1.0 EU per 1 μ g of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

Preparation and Storage

Reconstitution	Reconstitute at 100 μ g/mL in PBS containing at least 0.1% human or bovine serum albumin.
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.

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