

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Matriptase/ST14 Catalytic Domain in direct ELISAs and Western blots.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 416802
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human Matriptase/ST14 Catalytic Domain Val615-Val855 Accession # Q9Y5Y6
<b>Conjugate</b>	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
<b>Formulation</b>	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.  *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
<b>Intracellular Staining by Flow Cytometry</b>	0.25-1 µg/10 <sup>6</sup> cells	PC-3 human prostate cancer cell line fixed with paraformaldehyde and permeabilized with saponin

## PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, 2 to 8 °C as supplied.</li> </ul>

## BACKGROUND

Human Matriptase, encoded by the ST14 (suppression of tumorigenicity 14) gene, is also known as tumor associated differentially expressed gene 15 protein/TADG-15, epithin, and membrane-type serine protease 1/MT-SP1 (1). Predicted to have a significant role in tumor biology, Matriptase may be a novel target for anti-cancer therapy (2). However, expressed in most human epithelia, Matriptase is also important in several physiological processes (1). For example, it activates prostasin to initiate a protease cascade that is essential for epidermal differentiation (3), and it converts a single-chain IGF1BP1 into the two-chain form (4). Matriptase is a type II transmembrane serine protease with a complex modular structure (1). The 855 amino acid (aa) sequence of human Matriptase consists of a cytoplasmic tail (aa 1-55), a transmembrane domain (aa 56-76), and an extracellular portion (aa 77-855). The latter contains the following domains: SEA (aa 86-201), two CUBs (aa 214-334 and 340-447), four LDLRAs (aa 452-486, 487-523, 524-560, and 566-603), and a serine protease (aa 615-855). The physiological activation of the single-chain zymogen requires the cleavage at the SEA domain within the ER or Golgi, association with HAI-1, which facilitates the transport of the protease to the cell surface, and auto-cleavage at QAR-V(615)VGG (1). The activated Matriptase is inhibited by HAI-1, and the resulting HAI-1 complex can be shed from the cell surface (1).

### References:

- List, K. *et al.* (2006) *Mol. Med.* **12**:1.
- Uhland, K. (2006) *Cell. Mol. Life Sci.* **63**:2968.
- Netzel-Arnett, S. *et al.* (2006) *J. Biol. Chem.* **281**:32941.
- Ahmed, S. *et al.* (2006) *FEBS J.* **273**:615.

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