

**Anti-CD105-SAP**  
**TARGETED SAP CONJUGATE**

*a tool for eliminating cells that express human CD105 (Endoglin);  
targeted via the antibody to human CD105, eliminated via saporin*

**Catalog Number:** IT-80  
**Quantity:** 25 micrograms  
**Format:** PBS (0.14 M Sodium Chloride; 0.003 M Potassium Chloride; 0.002 M Potassium Phosphate; 0.01 M Sodium Phosphate; pH 7.4), no preservative.

**Background:** Targeted SAP conjugates are powerful and specific lesioning agents used in the technique known as Molecular Surgery. The ribosome-inactivating protein, saporin (from the seeds of the plant, *Saponaria officinalis*) is bound to a targeting agent (anything that is recognized on the cell surface and internalized). The targeted conjugate is administered to cells (*in vitro* or *in vivo*). The targeting agent seeks out and binds to its target on the cell surface. The conjugate is internalized, saporin breaks away from the targeting agent, and inactivates the ribosomes which causes protein inhibition and, ultimately, cell death. Cells that do not have the cell surface marker are not affected.

CD105 is also known as Endoglin and it modulates cellular response to TGF- $\beta$ , involved in vascular development and remodeling. It is a type I integral membrane homodimer protein with subunits of 90 kD found on vascular endothelial cells, bone marrow stromal cells, and hematopoietic stem/progenitor cells. CD105 is weakly expressed on stromal fibroblasts. It is also expressed on activated monocytes and tissue macrophages. Expression of CD105 is increased on activated endothelium in tissues undergoing angiogenesis, such as in tumors, or in cases of wound healing or dermal inflammation. CD105 is a component of the TGF- $\beta$  receptor system in human umbilical vein endothelial cells and binds TGF- $\beta$ 1 and  $\beta$ 3 with high affinity but does not bind to TGF- $\beta$ 2.

**Specificity & Preparation:** This targeted toxin recognizes cells that express human CD105 (Endoglin). Anti-CD105-SAP is a bonded conjugate of a mouse monoclonal antibody to human CD105 and the secondary conjugate Streptavidin-ZAP containing the ribosome-inactivating protein, saporin.

**Usage:** Anti-CD105-SAP eliminates cells expressing human CD105 (Endoglin). All other cells are left untouched. It is useful in retrograde transport (see Wiley *et al*, 1989). **There may be lot-to-lot variation in material; working dilutions must be determined by end user. If this is a new lot, you must assess the proper working dilution before beginning a full experimental protocol.**

**Storage:** Gently spin down material 5-10 seconds in a microfuge before use. Store the material in undiluted aliquots at  $-20^{\circ}\text{C}$ . Material should be aliquoted to a convenient volume and quantity to avoid repeated freezing and thawing that can damage the protein content. Under these conditions, the material has a very stable shelf-life. Thawing should be done at room temperature or on ice. The thawed solution should remain on ice until use.

Do not use a reducing agent (such as dithiothreitol, beta-mercaptoethanol or ascorbic acid) with this material. It will inactivate the toxin.

This material is an extremely potent cytotoxin. Handling should be done by experienced personnel. Gloves and safety glasses are required when handling this product. Care in disposal is mandatory; autoclaving or exposure to 0.2 M sodium hydroxide will inactivate the material. All labware that comes into contact with this material should be likewise treated.

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references.

**Selected References:**

1. Lund K, Olsen CE, Wong JJW, Olsen PA, Solberg NT, Høgset A, Krauss S, Selbo PK. (2017) 5-Fu Resistant Emt-Like Pancreatic Cancer Cells Are Hypersensitive to Photochemical Internalization of the Novel Endoglin-Targeting Immunotoxin Cd105-Saporin. *J Exp Clin Cancer Res* 36(1):187.
2. Wiley RG, Stirpe F, Thorpe P, Oelmann TN (1989) Neuronotoxic effects of monoclonal anti-Thy 1 antibody (OX7) coupled to the ribosome inactivating protein, saporin, as studied by suicide transport experiments in the rat. *Brain Res* 505:44-54.

**Control(s):** BIgG-SAP mouse**Safety:**

Good laboratory technique must be employed for safe handling of this product. This requires observation of the following practices:

1. Wear appropriate laboratory attire, including lab coat, gloves and safety glasses.
2. Do not pipet by mouth, inhale, ingest or allow product to come into contact with open wounds. Wash thoroughly any part of the body which comes into contact with the product.
3. Avoid accidental autoinjection by exercising extreme care when handling in conjunction with any injection device.
4. This product is intended for research use by qualified personnel only. It is not intended for use in humans or as a diagnostic agent. Advanced Targeting Systems is not liable for any damages resulting from the misuse or handling of this product.

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