

**Anti-CD45.2-SAP**  
TARGETED SAP CONJUGATE

*a tool for eliminating cells that express CD45.2 in mouse;  
targeted via the antibody to CD45.2, eliminated via saporin*

**Catalog Number:** IT-91  
**Quantity:** 25 micrograms, 100 micrograms, 250 micrograms, 1 milligram  
**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. Sterile-filtered.  
**Host:** Mouse  
**Clone:** 104

**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.

CD45.2 is an alloantigen of CD45, also known as leukocyte common antigen or Ly-5 and is a transmembrane glycoprotein tyrosine phosphatase expressed on all nucleated hematopoietic cells. CD45.2 is expressed by all leukocytes and the mouse strains expressing Ly5.2 (e.g BALB/c, CBA/Ca, CBA/J, C3H/He, C57BL, C57BR, C57L, C58, DBA/1, DBA/2, NZB, SWR, 129). It is characterized by several isoforms and is distributed according to cell type and degree of cellular differentiation. CD45 has shown to play a role in the initiation of T-cell receptor signaling via activation of the tyrosine kinases Lck and Fyn. Deficiency of CD45 results in T and B-lymphocyte dysfunction characterized by severe combined immune deficiency. CD45 immunoreactivity is characteristic of autoimmune diseases and cancer such as non-Hodgkin's lymphomas.

**Specificity & Preparation:** This targeted toxin recognizes cells that express mouse CD45.2. Anti-CD45.2-SAP is a bonded conjugate of biotinylated anti-CD45.2 and the secondary conjugate Streptavidin-ZAP containing the ribosome-inactivating protein, saporin.

**Usage:** Anti-CD45.2-SAP specifically eliminates cells expressing CD45.2 in mice. All other cells 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  $-20^{\circ}\text{C}$  for 1-2 months. For longer term storage store the material at  $-80^{\circ}\text{C}$ . 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. The material can be handled safely using normal laboratory precautions.

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

For disposal: autoclave, or expose to 0.2 M NaOH, materials that come into contact with the toxin.



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### Selected References:

1. Wiley RG, Stirpe F, Thorpe P, Oeltmann 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.

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references.

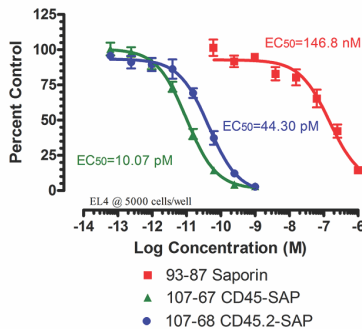
### Control(s): BIgG-SAP Mouse

### 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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EL4 cells (mouse T-lymphoblasts) were plated at 5000 cells per 90 ul/well in a 96-well plate and incubated overnight. Saporin (Cat. #PR-01) and Anti-CD45.2-SAP were added in 10 ul volumes and the plates left to incubate for 72 hours. XTT/PMS developing reagents were added and the plates read at 490 nm. Data analyzed by Prizm software (GraphPad).