Advanced Targeting Systems

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Anti-NET-SAP

TARGETED SAP CONJUGATE

a tool for eliminating cells that express Noradrenaline Transporters; targeted via biotinylated NET antibody and eliminated via saporin

Catalog Number: BETA-035
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.
The noradrenaline transporter, also known as the norepinephrine trasnporter (NET), is responsible for the reuptake of norepinephrine. NET can also reuptake extracellular dopamine. NET is essential for regulating concentration in the synaptic cleft. Deficiency of NET is associated with orthostatic intolerance, an autonomic nervous system disorder, and an overabundance of NET is associated with ADHD. NET is also a target for psychostimulants such as cocaine and amphetamines, which disrupt the function of NET, consequently causing an increase of norepinephrine in synaptic clefts.

Specificity & Preparation: This targeted toxin recognizes cells that express mouse noradrenaline transporter. Anti-NET-SAP is a bonded toxin between a biotinylated rabbit polyclonal NET antibody and the secondary conjugate Streptavidin-ZAP containing the ribosome-inactivating protein, saporin. This antibody binds to NET in several species, including mouse and rat. The rabbit polyclonal antibody was originally raised against a portion of the second extracellular loop of mouse NET. NET is specifically expressed on noradrenaline nerve terminals, and is also expressed in the adrenal glands and placenta.

Usage: Anti-NET-SAP eliminates cells expressing the mouse noradrenaline transporter. 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°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.

For research use only, not for use as a diagnostic.

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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.

Control(s): BIgG-SAP Rabbit

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.