ADVANCED TARGETING SYSTEMS

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Anti-ChAT-SAP

TARGETED SAP CONJUGATE

a tool for eliminating cells that express choline acetyltransferase in multiple species; targeted via the affinity-purified rabbit polyclonal antibody to ChAT, eliminated via saporin

Catalog Number: IT-42
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). Sterile-filtered.
Host: Rabbit
Immunogen: 22 amino acid peptide from porcine ChAT (GLF SSY RLP GHT QDT LVA QKSS) coupled to KLH

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.
Choline acetyltransferase (ChAT) catalyzes the synthesis of the neurotransmitter acetylcholine (ACh) from choline and acetyl-CoA in cholinergic neurons. ChAT serves as a specific marker for cholinergic neurons in both peripheral and central nervous systems. Dysfunction of cholinergic neurons underlies aspects of clinical symptoms found in neurological and psychiatric disorders such as Alzheimer's disease, Down and Rett syndromes.

Specificity and Preparation:
This targeted toxin recognizes cells that express choline acetyltransferase (ChAT). Anti-ChAT-SAP is a chemical conjugate of the affinity-purified rabbit polyclonal antibody to ChAT (Cat. #AB-N34AP) and the ribosome-inactivating protein, saporin (Cat. #PR-01). The antibody is generated at ATS using a 22-amino acid peptide from porcine ChAT (GLF SSY RLP GHT QDT LVA QKSS) as immunogen conjugated to KLH and injected in rabbits. The immunogen has 95% homology with human, rat and mouse ChAT sequences, and it has about 90% homology to the chicken sequence. The antibody is expected to cross-react with rat, mouse, and human. This product is routinely tested by cytotoxicity assay.

Usage and Storage:
Anti-ChAT-SAP specifically eliminates cells that express choline acetyltransferase. **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.**
Gently spin down material before use; 5-10 seconds in a microfuge should be adequate. The material should be stored at -20°C in undiluted aliquots. 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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Available Control(s): Rabbit-IgG-SAP, affinity-purified Anti-ChAT

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.

To view protocol(s) for this and other products please visit: www.ATSbio.com/support/protocols