Advanced Targeting Systems

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NMB-SAP

TARGETED SAP CONJUGATE

a tool for eliminating cells that express Neuromedin B receptor; targeted via Neuromedin B, eliminated via saporin

Catalog Number: IT-70
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.

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.
Neuromedin B (NMB) and GRP are two members of the mammalian bombesin family of peptides. These two peptides activate structurally similar but pharmacologically distinct G-protein-coupled receptors. NMB is expressed in a subset of sensory neurons that co-label with calcitonin gene-related peptide and TRPV1, suggestive of a role for NMB in nociception. NMB-SAP removes neurons expressing the NMB receptor. In the periphery NMB and GRP have a wide variety of actions including smooth muscle contraction and exocrine and endocrine functions. In the CNS these peptides regulate food intake and body temperature, as well as stress behavioral responses. Additionally, immunolocalization studies showed that NMB protein is present in the dorsal horn of the spinal cord and expression was also seen in sensory neurons.

Specificity & Preparation: This targeted toxin (molecular weight 32 kDa) recognizes cells that express the Neuromedin B receptor. NMB-SAP is a chemical conjugate of Neuromedin B (10 AA) and the ribosome-inactivating protein, saporin.

Usage: NMB-SAP eliminates Neuromedin B receptor expressing cells. All other cells are left untouched. It is not suitable for retrograde transport. **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.
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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Scan to view all product references.

Selected References:

1. Mishra SK, Holzman S, Hoon MA. (2012) A nociceptive signaling role for neuromedin B. *J Neurosci* 32(25):8686-8695.

Control(s): Blank-SAP

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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