Advanced Targeting Systems

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Neurotensin-CTA

TARGETED CTA CONJUGATE

a tool for activating cells that express neurotensin receptor;
targeted via neurotensin, activated via the catalytic A subunit of cholera toxin

Catalog Number: IT-60
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 CTA conjugates are powerful and specific stimulatory agents. These conjugates use the catalytic A subunit of cholera toxin (CTA) 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, CTA activates the cAMP pathway within the cells by ribosylating adenylate cyclase. Cells that do not have the cell surface marker are not affected.
Neurotensin is a 13 amino acid peptide, released by the hypothalamus and synthesized as part of a larger precursor protein that also includes the related neuropeptide neuromedin N. Implicated in the regulation of leutinizing hormone and prolactin release, neurotensin also has a significant interaction with the dopaminergic system. Intrathecal neurotensin has also been shown to be anti-nociceptive.

Specificity & Preparation: This targeted toxin (molecular weight 24 kDa) recognizes cells that express neurotensin receptors. Neurotensin-CTA is a chemical conjugate of neurotensin and the catalytic A subunit of cholera toxin.

Usage: Neurotensin-CTA stimulates cells expressing neurotensin receptors. All other cells are left untouched. **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 for 1-2 months. For longer term storage store the material at –80°C. Material should be aliquoted to a convenient volume and quantity to avoid repeated freezing and thawing that can damage the protein content. 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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Selected References:

1. Wiley RG, Lappi DA (2011) Selective activation of dorsal horn inhibitory interneurons produces anti-nociception. *Society for Neuroscience Annual Meeting, Washington DC*; Poster Abstract.
2. Wiley RG, Lemons LL, Chatterjee K, Russell BJ, Lappi DA (2010) Targeting inhibitory neurons in the superficial dorsal horn: Neurotensin-saporin (NTS-sap) and neurotensin-cholera toxin A subunit (NTS-CTA). *Society for Neuroscience Annual Meeting, San Diego, CA*; Poster Abstract #585.2/XX16.
3. Caudle, RM (2007) Sensitization of spinal cord nociceptive neurons with a conjugate of substance P and cholera toxin. *BMC Neuroscience* 8:30.

Control(s): Blank-CTA

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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