ADVANCED TARGETING SYSTEMS

6352 CORTE DEL ABETO, STE B
CARLSBAD, CA 92011 USA
01.858.642.1988 • WWW.ATSBIO.COM

FGF-SAP

TARGETED SAP CONJUGATE

a tool for eliminating cells that express FGF receptor;
targeted via rat FGF-2, or basic fibroblast growth factor, eliminated via saporin

Catalog Number: IT-38
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.
FGF-2, or basic fibroblast growth factor, binds all of the FGF receptors with high affinity. We have used this molecule to produce FGF-SAP, which has a healthy experimental publication record ("FGF" and "saporin" in PubMed: 25 hits). It has been used to clean primary cultures of fibroblasts. It was important in determining the role of smooth muscle cells in restenosis of damaged vasculature. It was widely used *in vivo* for the elimination of FGF receptor-expressing cells, including neuronal cell types, cancer cells, and lens epithelial cells. FGF-2 has been well characterized demonstrating binding to all four of the FGF high-affinity tyrosine kinase transmembrane receptors including binding to FGF receptor-5 with lower affinity. This conjugate will be useful for the study of systems biology.

Specificity and Preparation:
This targeted toxin (average molecular weight 63 kDa) recognizes FGF receptor-expressing cells including neuronal cell types, cancer cells, and lens epithelial cells with cross reactivity in several mammalian species. FGF-2 has been well characterized demonstrating binding to all four of the FGF high-affinity tyrosine kinase transmembrane receptors including binding to FGF receptor-5 with lower affinity. FGF-SAP is a chemical conjugate of rat FGF-2, or basic fibroblast growth factor, and the ribosome-inactivating protein, saporin (Cat. #PR-01). This product is routinely tested by cytotoxicity assay.

Usage and Storage:
FGF-SAP specifically eliminates cells expressing the FGF receptor. 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.**
Gently spin down material before use; 5-10 seconds in a microfuge should be adequate. 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. 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.

ADVANCED TARGETING SYSTEMS

6352 CORTE DEL ABETO, STE B
CARLSBAD, CA 92011 USA
01.858.642.1988 • WWW.ATSBIO.COM

FGF-SAP
TARGETED SAP CONJUGATE

Available Control(s): Saporin

References:

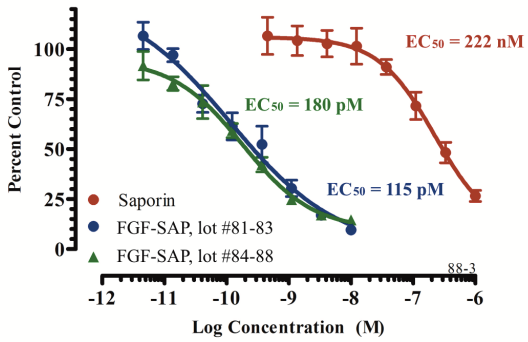
1. Beitz JG, Davol P, Clark JW, Kato J, Medina M, Frackelton AR, Jr., Lappi DA, Baird A, Calabresi P (1992) Antitumor activity of basic fibroblast growth factor-saporin mitotoxin *in vitro* and *in vivo*. *Cancer Res* 52:227-230.
2. David T, Tassin J, Lappi DA, Baird A, Courtois Y (1992) Biphasic effect of the mitotoxin bFGF-saporin on bovine lens epithelial cell growth: effect of cell density and extracellular matrix. *J Cell Physiol* 153:483 -490.
3. Gonzalez AM, Lappi DA, Buscaglia ML, Carman LS, Gage FH, Baird A (1991) Basic FGF-SAP mitotoxin in the hippocampus. Specific lethal effect on cells expressing the basic FGF receptor. *Ann N Y Acad Sci* 638:442-444.
4. Lindner V, Lappi DA, Baird A, Majack RA, Reidy MA (1991) Role of basic fibroblast growth factor in vascular lesion formation. *Circ Res* 68:106-113.
5. Beattie GM, Lappi DA, Baird A, Hayek A (1990) Selective elimination of fibroblasts from pancreatic islet monolayers by basic fibroblast growth factor-saporin mitotoxin. *Diabetes* 39:1002-1005.

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



NIH/3T3 cells, a mouse embryonic fibroblast cell line, are plated at 500 cells/90 μl and incubated overnight. FGF-SAP, a chemical conjugate of rat FGF-2 and saporin, and saporin alone are added to the plates in 10-μl volumes. Plates are incubated 72 hours. Plates are developed using sulforhodamine B, and read at 564 nm in a plate reader. Data analysis was done by PRISM (GraphPad).

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