Targeting Talk: Streptavidin versus Avidin

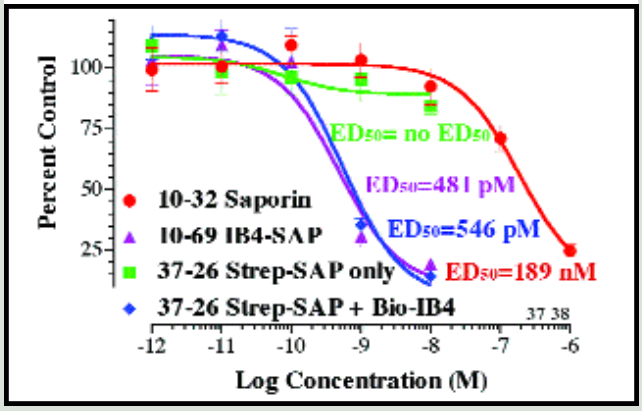
Q I recently tried to order avidinylated-SAP and was told that this product has been replaced with a new product, streptavidin-SAP. Why did you replace avidinylated-SAP?

A We initially had good results with avidinylated-SAP. It combined well with biotinylated antibody to produce extremely potent cytotoxic materials, and had low toxicity itself. However, the weaknesses of avidin are well-documented. Probably the most severe is its high isoelectric point that has been suggested to cause non-specific binding. As we produced more batches of avidinylated-SAP and completed comparative studies, we in fact, found this to be the case.

Q I use avidinylated-SAP to demonstrate that my antibody internalizes. It worked quite well for me.

A A couple of months ago we received two reports from customers that they were seeing that, even in batches that had performed well in quality control testing, there was a non-specific cytotoxicity with some cells and/or cell lines. Since a major use of this material is to demonstrate internalization of the biotinylated targeting agent, this was an unacceptable situation.

KNRK cells are plated at 2500 cells/well and incubated overnight. Streptavidin-SAP is premixed with Biotinylated-IB4 in equimolar concentrations or added to a plate alone. Saporin, IB4-SAP, and the Streptavidin-SAP + Biotinylated-IB4 mixture are added in 10-µl volumes and plates incubated 72 hrs. PMS/MTS is added and the plates are incubated 15-30 min, then read at 490 nm.



We changed to streptavidin to overcome these specificity issues. As shown in the figure above, streptavidin-SAP has an excellent capacity to transform a biotinylated reagent into a potent cytotoxic targeting vehicle, while streptavidin-SAP alone has no detectable cytotoxicity.

Streptavidin-SAP Pricing

IT-27-25	25 micrograms	$165 ($190)
IT-27-100	100 micrograms	$625 ($725)
IT-27-250	250 micrograms	$1450 ($1775)

Kits (pricing in parentheses) includes equal amounts of saporin

Upcoming Events

FENS
July 10-14, 2004
Lisbon, Portugal
Booth 42

Society for Neuroscience
October 23-27, 2004
San Diego, CA
www.atsbio.com/golf

Join ATS at the Torrey Pines Golf Course

Targeting Teaser Winners

Congratulations to the puzzle solvers from our last newsletter. Each winner receives $100 credit towards research product purchases from Advanced Targeting Systems.

The solution to the puzzle was:

Jumbles: PLANETS OPTICS CALCULUS WESTMINSTER VELOCITY

Answer: SIR ISAAC NEWTON

WINNERS: Armando Poeppl, Univ Health Network * Dr. Hilda Yu, Univ of CAIrvine * Ching-Hui Yang, Univ Texas Health Ctr * Douglas J. Taatjes, Univ Vermont * Filomena Dimayuga, Univ Kentucky * Greg Hickey, Massachusetts General Hospital * Tanja Babic, Univ Western Ontario * Seto Chice, SUNY HSC Brooklyn * Michael Lebowitz, Panacea Pharmaceuticals Inc * Robert Speth, Univ Mississippi * Thomas Breithaupt, Des Moines Univ * Dr. Carmen Diaconu, Institute of Virology

Isaac Newton was born December 25, 1642 in Lincolnshire, England. His accomplishments in mathematics, optics, and physics laid the foundations for modern science.

As a mathematician, Newton invented integral calculus, and jointly with Leibnitz, differential calculus.

Newton made a huge impact on theoretical astronomy. He defined the laws of motion and universal gravitation which he used to predict precisely the motions of stars, and the planets around the sun. The first law dealt with forces and changes in velocity. Newton also constructed the first reflecting telescope.

Newton died in London on March 20, 1727 and was buried in Westminster Abbey, the first scientist to be accorded this honor.