

Targeting Talk: Product Questions

Q: *Some suppliers sell their streptavidin conjugates in amounts given as streptavidin equivalents. Is that also the case for your product, Streptavidin-ZAP? What is important to me is to know what the molar concentration of streptavidin conjugate is, and the volume of your preparation.*

A: The molar concentration of Streptavidin-ZAP (Cat. #IT-27) will depend on the lot; the accompanying data sheet will contain the molecular weight. We recommend that you mix Streptavidin-ZAP and your biotinylated material at equimolar concentrations. For our in-house *in vitro* quality control assays, we make a stock vial containing both 1 μ M of biotinylated material and 1 μ M of Streptavidin-ZAP diluted in media in 150 μ l total volume. From this stock vial, we add 10 μ l to each well of a plate containing cells in 90 μ l volumes, which then dilutes the stock material to its correct concentration of 100 nM. Check out the calculators on our website: www.atsbio.com/calculations.html

Calculate Volume Required to Dilute a Solution

Calculate Molarity of a Solution

Calculate Volume of a Solution

Calculate Mass of a Solution

Convert Between Moles and Grams

Convert Molar Units

Convert Liter Units

Q&A Products

Streptavidin-ZAP (IT-27)

Custom Saporin Conjugates

Q: *So, each mole of streptavidin will bind 4 moles of biotin?*

A: Streptavidin-ZAP was created for use as an initial diagnostic step with biotinylated targeting agents, before moving on to a direct linkage between the optimal targeting agent and Saporin. The biotin-streptavidin interaction should be considered a linker; the major players are the targeting agent and Saporin. The targeting agent to Saporin ratio is kept at 1:2 M. When pre-mixing the biotinylated moiety with Streptavidin-ZAP in an equimolar ratio the ability of Streptavidin-ZAP to bind up to 4 biotins ensures that most of the biotinylated moiety will have Streptavidin-ZAP attached (no free biotinylated moiety). Streptavidin equivalents would not be appropriate as the Saporin moiety in Streptavidin-ZAP is the primary focus of the technology.

Send a message on our website
to get answers to
your targeting questions.

Targeting Topics: Recent Scientific References

(continued from page 5)

BB2 bombesin receptor-expressing spinal neurons transmit herpes-associated itch by BB2 receptor-independent signaling.

Sasaki A, Adhikari S, Andoh T, Kuraishi Y. *Neuroreport* Epub 2013.

Using a skin rash model created by inoculating mice with human herpes virus, bombesin receptor-expressing spinal neurons were lesioned intrathecally with 400 ng of Bombesin-SAP (Cat. #IT-40). Lesioned animals displayed reduced scratching, but licking (due to pain) was not reduced.

Time Course Study of Targeted Ablation of KNDy Neurons, but not Tyrosine-Hydroxylase Neurons, in the Rat Arcuate Nucleus Using a Neurokinin B-Saporin.

Helena CV, Kalil B, Anselmo-Franci JA, Bertram R. *Endocr Rev* 34 (03_MeetingAbstracts):OR47-5, 2013.

Ovariectomized rats were given bilateral injections of NK3-SAP (Cat. #IT-63) into the arcuate nucleus for a time course study of KNDy neuron loss. Blank-SAP (Cat. #IT-21) was used as a control.

State-dependent contribution of the hyperpolarization-activated na^+/k^+ and persistent na^+ currents to respiratory rhythmogenesis in vivo.

Montandon G, Horner RL. *J Neurosci* 33(20):8716-8728, 2013.

The hyperpolarization-activated cation current in the preBöttinger complex (preBötC) was identified as a critical component of respiratory rhythm. An anti-neurokinin 1 receptor antibody (Cat. #AB-N04 replaced by Cat. #AB-N33AP) at a 1:1000 dilution was used to identify preBötC neurons in the brainstem.