Targeting Talk: *Targeted Toxin Controls*

by Dr. Douglas Lappi

Q: Your targeted toxin kits come with different controls. I'm not sure of the best way to use them. For example, with the anti-SERT-SAP kit there is included unconjugated antibody, unconjugated saporin, and a control conjugate, mouse IgG-SAP. Should I use them all in the same experiment or for different purposes?

A: Yes, perhaps we do have a few too many options for controls; better too many than too few. For anti-SERT-SAP, the ideal control is mouse IgG-SAP. Anti-SERT-SAP is made from saporin conjugated to a mouse monoclonal IgG that has SERT as its antigen. So, mouse IgG-SAP--that is, saporin conjugated to mouse IgG that has no specific antigen for targeting--would be the best control, in my mind. For years, the unconjugated antibody and unconjugated saporin mixed together was the best control available (until we came out with the "irrelevant" control immunotoxins), and still might be considered a second good control, or useful in cases where down-regulation by the antibody is a concern.

Other related articles:

Lappi, DA (2005) Featured Products: Control Immunotoxins. *Targeting Trends* 6(2):7.

Lappi, DA (2002) Control Conjugates: The Perfect Companion for Targeted Toxins. *Targeting Trends* 3(1):1,6.

Lappi, DA (2001) Featured Products: Controls for Immunotoxins. *Targeting Trends* 2(2):7.

Q: What about for the peptide toxins like orexin-SAP or SP-SAP — what controls are available for those?

A: We have produced Blank-SAP as a control for the peptide ligand toxins. Blank-SAP (Cat. #IT-21) is a peptide that has the usual common amino acids that are found in peptide neurotransmitters, but arranged in a sequence that is random and not detected in homology searches. So, it's like shooting blanks; it should never find an amenable receptor. This is quite an important control; the peptide ligand toxins are often delivered directly to tissue, and there are cases in which there will be no toxicity or non-specific toxicity. The best use we have seen for Blank-SAP has been in Bugarith K, Dinh TT, Li AJ, Speth RC, Ritter S (2005) Basomedial hypothalamic injections of neuropeptide Y conjugated to saporin selectively disrupt hypothalamic controls of food intake. *Endocrinology* 146(3):1179-1191.

As any journal reviewer will tell you, it's very important to document the specificity, and with Blank-SAP as a control, you can definitively show that toxicity is due to proper targeting, rather than non-specific cytotoxicity. This should provide the information needed so the reviewer doesn't have to make you go back and document specificity with further experimental work!

Blank-SAP, Cat. #IT-21

control for use with peptide conjugates

CCK-SAP (Cat. #IT-31)
CRF-SAP (Cat. #IT-13)
Dermorphin-SAP (Cat. #IT-12)
Galanin-SAP (Cat. #IT-34)
NPY-SAP (Cat. #IT-28)
Orexin-SAP (Cat. #IT-20)
SP-SAP (Cat. #IT-07)
SSP-SAP (Cat. #IT-11)

Goat IgG-SAP, Cat. #IT-19

control for use with second immunotoxins

Anti-M-ZAP (Cat. #IT-30)
Hum-ZAP (Cat. #IT-22)
Mab-ZAP (Cat. #IT-04)
Rab-ZAP (Cat. #IT-05)
Rat-ZAP (Cat. #IT-26)

Rabbit IgG-SAP, Cat. #IT-35

control for immunotoxins that use a rabbit polyclonal

mu p75-SAP (Cat. #IT-15)

Rat IgG-SAP, Cat. #IT-17

control for immunotoxins that use a rat monoclonal

Anti-CD25-SAP (Cat. #IT-29)
Anti-DAT-SAP (Cat. #IT-25)
Mac-1-SAP mouse/human (Cat. #IT-06)

Mouse IgG-SAP, Cat. #IT-18

control for immunotoxins that use a mouse monoclonal

192-IgG-SAP (Cat. #IT-01)
OX7-SAP (Cat. #IT-02)
Anti-DBH-SAP (Cat. #IT-03)
ME20.4-SAP (Cat. #IT-15)
Anti-SERT-SAP (Cat. #IT-23)
Anti-CD25-SAP (Cat. #IT-24)
Mac-1-SAP rat (Cat. #IT-33)

Questions about an ATS product or Molecular Surgery technique?
Write to us at ats@ATSbio.com