Dermorphin-SAP Kills MOR-Positive Cells

(continued from page 1)

The conjugate is made with dermorphin, first characterized from the skin of *Phyllomedusa sauvagei* by Montecucchi *et al*. (2). This agonist has one of the best profiles of specificity for the MOR of any known molecule, with exquisite affinity for the MOR (Fig. 2), while much lower affinity for the delta receptor (3). It has been documented to be internalized upon receptor binding, and with saporin attached takes in the ribosome-inactivating agent, causing protein synthesis inhibition and subsequent cell death. This specific lesioning tool is exemplary of many of Advanced Targeting Systems' products.

Dermorphin-SAP was developed from a collaboration with Ron Wiley, and a glimpse of the activity of this cytotoxin was published in the journal *Neuropeptides* (4). MOR-expressing neurons have long been considered some of the most important cells in the nervous systems because of their participation in pain, pain control, addiction, gastrointestinal motility, and mast cell function, among others. This specific cytotoxin provides new methods for understanding these neurons and how they work.

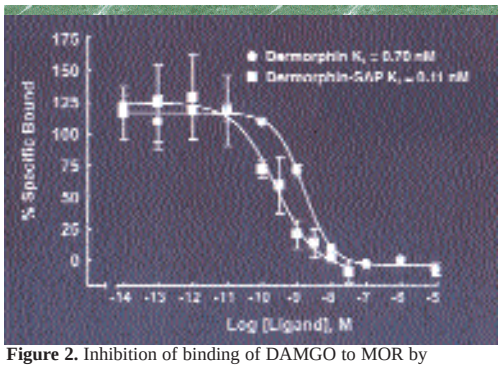

Figure 2. Inhibition of binding of DAMGO to MOR by dermorphin and dermorphin-SAP. Data demonstrate retention of binding after conjugation of dermorphin to saporin.

A product data sheet and ordering information for dermorphin-SAP (Cat. # IT-12) are available on the ATS website at: www.ATSbio.com.

MOR-expressing neurons play a role in pain, addiction, gastrointestinal motility and mast cell function.

References

1. Porreca F, Burgess SE, Gardell LR, Vanderah TW, Malan TP, Jr, Ossipov MH, Lappi DA, Lai J (2001) Inhibition of neuropathic pain by selective ablation of brainstem medullary cells expressing the μ-opioid receptor. *J Neurosci* 21(14):5281-5288.
2. Montecucchi PC, de Castiglione R, Piani S, Gozzini L, Erspamer V (1981) Amino acid composition and sequence of dermorphin, a novel opiate-like peptide from the skin of *Phyllomedusa sauvagei*. *Int J Pept Prot Res* 17(3):275-283.
3. Attila M, Salvadori S, Balboni G, Bryant SD, Lazarus LH (1993) Synthesis and receptor binding analysis of dermorphin hepta-, hexa- and pentapeptides. *Int J Pept Prot Res* 42:550-559.
4. Lappi DA, Wiley RG (2000) Entering through the doors of perception: characterization of a highly selective Substance P receptor-targeted toxin. *Neuropeptides* 34(5):323-328.

Targeting Ticklers

Warning Signs -- it may be time to vacate the lab when you see your labmate doing any of the following:

Is observed cradling a stir-bar while quietly muttering, "They'll never get you my dear, you're my special one, my one and only, and they can never take you away from me..."

Looks up dirty words in the Swiss protein data bank.

Requires sunglasses if the curtains are opened in the lab.

Starts an elbow fight with you because you're pipetting on her side of the lab.

Autoclaves articles of your clothing when you don't strictly adhere to the schedule of the sign-up sheet.

Scrawls the words "Lab Police" in magic marker on the back of his lab coat and starts using the butt of his pipetteman as a tool for safety enforcement.

Targeting Teaser Winners

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

The solution to the puzzle was:

Jumbles: SURGERY PROTOCOL HAMSTER DEPLETION HELIUM

Answer: How the scientist prepared the cold formula --- HE TURNED UP THE HEAT!

WINNERS: Nicole Sanders, *Washington State Univ* * Elena Yablonsky-Alter, *CUNY* * Bruce Pappas, *Carleton Univ* * Michael Levy, *Baylor College* * Wen Sheng, *Minnesota Research Foundation* * Christopher Herzog, *Ohio State Univ* * Brian Miller, *Univ of Texas* * Tim Saurer, *Ohio State Univ* * Ken Giuliano, *Cellomics Inc* * Lynn Young, *RW Johnson* * Bob Speth, *Washington Univ* * Peter Gillespie, *OHSU* * Charles Sevigny, *Univ of Virginia* * Christopher Flores, *Univ of Texas at San Antonio*