Targeting Tools: Featured Products

anti-SERT-SAP

At the Society for Neuroscience (SFN) meeting, November 2-7 in Orlando FL, Advanced Targeting Systems will announce the availability for purchase of its newest neuron-specific cytotoxin, anti-SERT-SAP. This immunotoxin utilizes a monoclonal antibody to the third extracellular domain of the serotonin re-uptake transporter (SERT) that was described at last year's SFN meeting, as were *in vitro* data on the immunotoxin activity.

At the Federation of European Neuroscience Societies meeting in Paris in April, Lappi and colleagues presented a poster demonstrating the specificity of this antibody for cells that express SERT, and the lack of reactivity for cells that express the norepinephrine transporter or the dopamine transporter.

Figures 1a and 1b (provided by E. Nattie) show the *in vivo* activity of anti-SERT-SAP against SERT-bearing neurons of the raphe nucleus; there is an almost complete removal of the target cell population, while the architecture of the raphe is maintained beautifully. The potential of anti-SERT-SAP for the understanding of the functional roles of serotonergic neurons in behavior is enormous. This immunotoxin continues the tradition of Advanced Targeting Systems in bringing you the highest quality materials with the most rigorous quality control; it has been in development for more than two years and has been carefully characterized, including sending it out for evaluation to leading scientists, as we do with other ATS products.

5,7-DHT has often been used for the lesioning of serotonergic neurons (see Dr. Cassel's excellent cover article in this issue). We would like to emphasize the differences and advantages of the new anti-SERT-SAP. Because 5,7-DHT also targets noradrenergic neurons, pre-injection of a protective agent such as desipramine is required. In addition, 5,7-DHT is rapidly oxidized, requiring even a third compound (usually ascorbic acid) to be injected. Finally, there is a significant difference in the mode of action. 5,7-DHT will lesion axons and terminals and usually leave a cell that can recover (Baumgartner & Bjorklund, *Annu Rev Pharmacol Toxicol*, 1976, 16:101-111), whereas anti-SERT-SAP will permanently eliminate the target cell and any function it may perform.

At the 2002 SFN meeting, Dr. Eugene Nattie will make a slide presentation showing the *in vivo* efficacy of this targeted toxin and its specificity for serotonergic neurons (Program #221.3, Monday, 8:30 AM, Nov. 4, Room 206a). If you can't make that, stop by and visit the ATS booth (#1616). We'll give you all the details.

Coming Soon!

anti-DAT-SAP
Targeted Toxin

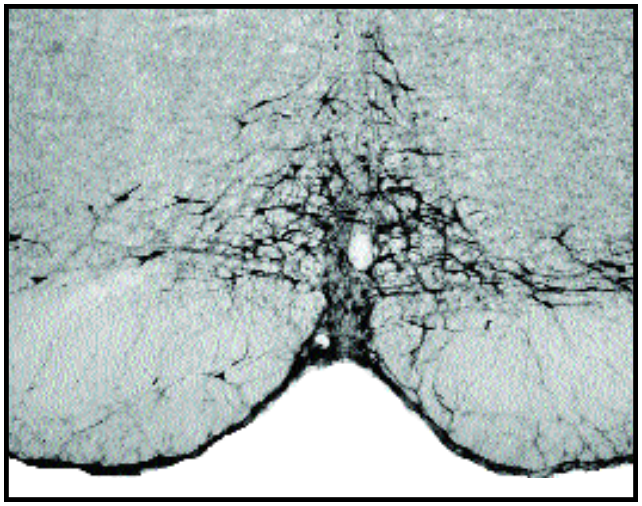

Figure 1a. The control rat brain section, stained for TPOH, received no injection of anti-SERT-SAP.

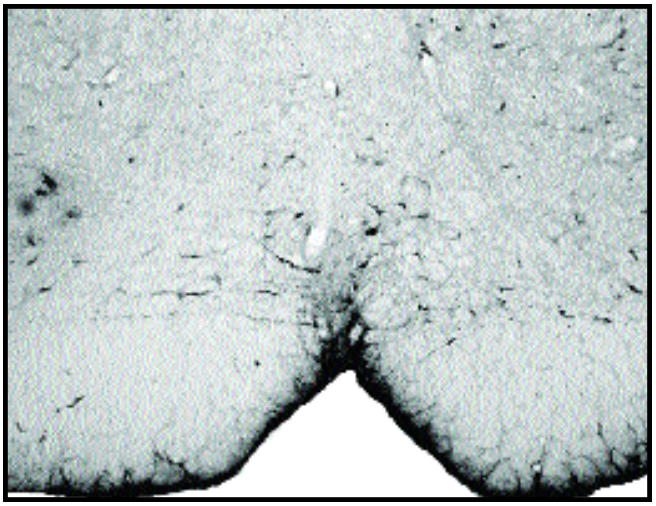

Figure 1b. The anti-SERT-SAP treated rat received two adjacent 100-nl injections of anti-SERT-SAP (1 μM) into medullary raphe at the level of the caudal part of facial nucleus. The injections were 2 weeks prior to sacrifice. Treated rats had up to a 16% reduction in the ventilatory response to breathing 7% CO_2 during both sleep and wakefulness. These data show that TPOH ir neurons in the medullary raphe are involved in the ventilatory response to systemic hypercapnia.

Visit the ATS website for a complete list of products.