

Targeting Trends

Reporting the latest news in Molecular Surgery



Immunolesioning: From Spinal Cord to Brain

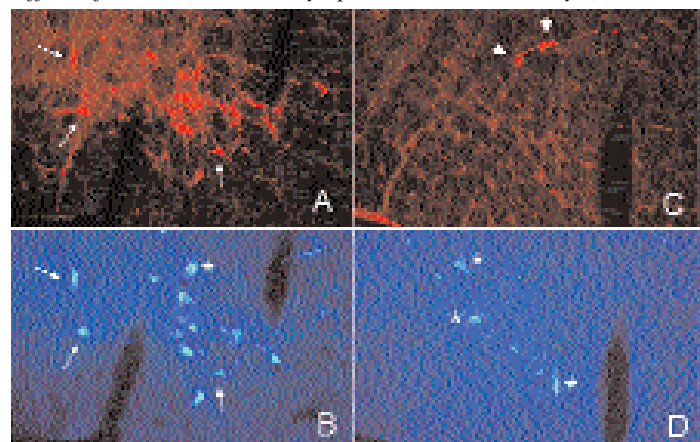
Dr. Ann Schreihofner, University of Virginia, contributes this issue's article from the laboratories of ATS customers. Dr. Schreihofner summarizes her research with anti-DBH-SAP (Cat. #IT-03) to immunolesion specific rostral ventral medulla neurons that project to the spinal cord by injection of anti-DBH-SAP into the rat spinal cord. The toxin is taken up and retrogradely transported to the cell bodies, eliminates protein synthesis and causes cell death. She examines the effect of neuronal loss on sympathetic nerve activity and arterial pressure.

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Figure Legend: Depletion of bulbospinal C1 adrenergic neurons with intraspinal injection of anti-DBH-SAP.

(A) Phenylethanolamine-N-methyltransferase-immunoreactive (PNMT-ir) neurons in the RVLM from a rat after intraspinal injection of a control toxin, saporin conjugated to a mouse IgG, showing an abundance of C1 cells. (B) Same area of section in A showing many C1 neurons retrogradely labeled from intraspinal injection of Fast Blue (Arrows). (C) PNMT-ir neurons in the RVLM from a rat treated with anti-DBH-SAP showing a massive depletion of bulbospinal C1 neurons. Arrowheads indicate C1 cells with no Fast Blue, suggesting these are not bulbospinal. (D) Same area of section in C showing neurons retrogradely labeled with Fast Blue. Asterisks indicate bulbospinal neurons that are not C1 cells, which are spared by treatment with anti-DBH-SAP. The ventral surface of the medulla is at the bottom left of each photomicrograph.



The rostral ventrolateral medulla (RVLM) is an essential structure for the generation of the sympathetic tone that maintains arterial pressure (AP) and for the generation of many sympathetic reflexes. Spinally-projecting C1 neurons, whose firing characteristics resemble those of recorded sympathetic nerves, are located in the RVLM. These cells have been

speculated to be the critical presympathetic neurons. However, the RVLM also contains non-catecholaminergic neurons whose properties suggest they may have an important role in the generation of sympathetic vasomotor tone. The relative roles of the C1 and non-C1 bulbospinal RVLM neurons have been difficult to determine. Until recently the selective

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ATS Joins Forces with Cytometry Research

Early in 2000, Douglas Lappi and Leo Fernandez began a series of discussions that soon led to the merging of resources, technologies and scientific expertise of their two companies: Advanced Targeting Systems, Inc. (ATS) and Cytometry Research, LLC. The two scientists quickly realized there were advantages that each company possessed that would greatly complement the other. The two companies now share laboratory and office space in the booming biotechnology community of San Diego.

Cytometry Research offers a wide range of services in flow cytometric analysis as well as consultation on current flow cytometry applications. Some of these include assays in apoptosis, cell cycle, intracellular cytokine expression, and tetramer peptides. Cytometry Research brings over 15 years of experience in flow cytometry analysis and FACS cell sorting. ATS enhances these services by providing expertise in cell culture and manipulation, use and production of fluorescent cell-binding materials, cell transfections, and cell labeling.

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Newsletter Highlights

- ◆ Merging of technologies makes everyone a winner
- ◆ IB4-Saporin, Neuroscience Antibodies
- ◆ Targeted Toxins: Safe, effective *in vivo* administration

