Targeting Topics: Recent Scientific References

**Regulation of Ejaculation via Intraspinal Connections.**
Staudt MD, Truitt WA, McKenna KE, de Oliveira CV, Lehman MN, Coolen LM.

The authors examined the hypothesis that specific lumbar spinothalamic (LSt) cells control ejaculation through intraspinal connections. Rats received six bilateral injections of SSP-SAP (Cat. #IT-11) into the spinal cord, 48 ng in total. Saporin (Cat. #PR-01) was used as a control. It was found that while erectile function and emission were not affected, the usual rhythmic contractions of the bulbocavernosus muscle during ejaculation were prevented.

**Carrageenan induced phosphorylation of Akt is dependent on neurokinin-1 expressing neurons in the superficial dorsal horn.**
Choi JI, Koehrn FJ, Sorkin LS.

In this work the authors administered 100 ng SSP-SAP (Cat. #IT-11) into the intrathecal space of rats (saporin, Cat. #PR-01 was used as a control). Lesioned animals displayed decreased carrageenan-induced mechanical allodynia, and carrageenan-induced phosphorylation of Akt was blocked throughout the spinal cord gray matter. Anti-NK-1 (Cat. #AB-N33AP) was used for immunohistochemistry.

**Subplate neurons promote spindle bursts and thalamocortical patterning in the neonatal rat somatosensory cortex.**
Tolner EA, Sheikh A, Yukin AY, Kaila K, Kanold PO.

Immature cortices in both human and rat have spontaneous activity associated with the maturation of cortical synapses and neuronal circuits. In order to investigate what cells are controlling these events the authors administered 400 ng of 192-IgG-SAP (Cat. #IT-01) to the S1 cortex hindlimb/forelimb area of rats. mu p75-SAP (Cat. #IT-16) and mouse-IgG-SAP (Cat. #IT-18) were used as controls. This lesion eliminates subplate neurons which results in a significant loss of evoked spindle burst activity.

**Neuromodulation targets intrinsic cardiac neurons to attenuate neuronally mediated atrial arrhythmias.**
Gibbons DD, Southerland EM, Hoover DB, Beaumont E, Armour JA, Ardell JL.

Cardiac arrhythmias can be generated by excessive activation of specific inputs to the intrinsic cardiac nervous system. The authors sought to determine whether subpopulations of neurons were responsible for this activation, and therefore potential therapeutic targets. A series of studies were done following electrical stimuli to the mediastinal nerves. Choline acetyltransferase levels were assessed using anti-ChAT (Cat. #AB-N34) in immunohistochemistry. The data suggest activation of certain neurons by mediastinal nerve stimulation results in atrial arrhythmias leading to atrial fibrillation.

**Application of anti-CD103 immunotoxin for saving islet allograft in context of transplantation.**
Zhang L, Hadley GA.

This work investigates whether depletion of CD103-positive cells protects transplanted islets from host-immune cell attack. Diabetes was induced in mice, followed by an islet transplant. Anti-CD103-SAP (Cat. #IT-50) was administered via i.p. injection (1.0 mg/kg or 2.0 mg/kg). Rat IgG-SAP (Cat. #IT-17) was used as a control. Diabetic mice treated with anti-CD103-SAP after islet transplantation had an indefinite survival time as compared to untreated mice that survived fewier than 20 days.

**Spinal bombesin-recognized neurones mediate more nonhistaminergic than histaminergic sensation of itch in mice.**
Han N, Zu JY, Chai J.
*Clin Exp Dermatol* Epub 2012.

The authors administered 400 ng of Bombesin-SAP (Cat. #IT-40) to the lumbar spinal subarachnoid space of rats and evaluated the distribution of Fos-positive cells in the dorsal horn after stimulation. Saporin (Cat. #PR-01) was used as a control. The results demonstrate that the neurones eliminated by Bombesin-SAP are critical to both acute and chronic itch pathways,

(continued on page 4)