Targeting Topics: Recent Scientific References

(continued from page 3)

Selective immunolesioning of the basal forebrain cholinergic neurons in rats: effect on attention using the 5-choice serial reaction time task.

Risbrough V, Bontempi B, Menzaghi F
Psychopharmacology 164:71-81, 2002

The authors used 0.067 µg injections of 192-Saporin (Cat. #IT-01) into the nucleus basalis magnocellularis to investigate attentional performance in rats. The treated animals exhibited a very specific subset of attentional deficits, many centered around increased difficulty completing tasks in the presence of distractions.

Spinal neurons that possess the substance P receptor are required for the development of central sensitization.

Khasabov SG, Rogers SD, Ghilardi JR, Peters CM, Mantyh PW, Simone DA
J Neurosci 22(20):9086-9098, 2002

Using 5 x 10^{-5} M intrathecal injections of SP-SAP (Cat. #IT-07) the authors examined the role of SPR-expressing neurons in modulation of pain and hyperalgesia. Treated animals exhibited highly attenuated sensitization to stimuli after capsaicin treatment as compared to controls, but normal responses in the absence of capsaicin.

In vivo labeling of rabbit cholinergic basal forebrain neurons with fluorochromated antibodies.

Hartig W, Varga C, Kacza J, Grosche J, Seeger J, Luiten PG, Brauer K, Harkany T
NeuroReport 13(11):1395-1398, 2002

To investigate *in vivo* labeling of p75 low-affinity neurotrophin receptor the authors conjugated Cy3 to ME20.4 (Cat # ABN07) and performed either unilateral or bilateral icv injections in rabbits. The antibody labeled only cholinergic neurons demonstrating its potential as a p75 marker.

Reactivity to object and spatial novelty is normal in older Ts65Dn mice that model Down syndrome and Alzheimer's disease.

Hyde LA, Crnic LS
Brain Res 945:26-30, 2002

The authors hypothesized that a mouse model for Down syndrome may show some of the same cognitive deficits exhibited by rats lesioned with 192-Saporin (Cat. #IT-01), which eliminates cholinergic cells in the basal forebrain. The results suggest that in this Down syndrome model, cell loss has a much greater cognitive effect if it happens early in development as opposed to in adulthood.

Motoneuron-derived neurotrophin-3 is a survival factor for PAX2-expressing spinal interneurons.

Bechade C, Mallecourt C, Sedel F, Vyas S, Triller A
J Neurosci 22(20):8779-8784, 2002

In the rat, half of motoneurons die between embryonic day 15 and postnatal day 1. Programmed cell death of interneurons is not as well characterized. The authors cultured explants of brachial neural tubes from rat embryos in the presence of 200 ng/ml of 192-Saporin (Cat. #IT-01). Although 192-Saporin had no direct effect on interneurons in culture, elimination of p75-neurotrophin receptor-expressing neurons caused the interneurons to die.

Effect of 192 IgG-saporin on circadian activity rhythms, expression of P75 neurotrophin receptors, calbindin-D28K, and light-induced Fos in the suprachiasmatic nucleus in rats.

Beaule C, Amir S
Exp Neurol 176(2):377-389, 2002

The authors used bilateral icv injections of 200 ng of 192-Saporin (Cat. #IT-01) to investigate the contribution of $p75^{NTR}$-expressing neurons to the determination of a circadian rhythm. The data show that $p75^{NTR}$-expressing neurons are not essential for this process.

Rivastigmine antagonizes deficits in prepulse inhibition induced by selective immunolesioning of cholinergic neurons in nucleus basalis magnocellularis.

Ballmaier M, Casamenti F, Scali C, Mazzoncini R, Zoli M, Pepeu G, Spano PF
Neuroscience 114(1):91-98, 2002

The authors injected 300 nl of 400 ng/µl 192-Saporin (Cat. #IT-01) bilaterally into the nucleus basalis magnocellularis of rats, then treated the lesioned animals with rivastigmine, a cholinesterase inhibitor. Animals treated with rivistagmine exhibited raised levels of cortical acetylcholine, in contrast to undetectable acetylcholine levels in lesioned animals not treated with rivastigmine.

Mnemonic deficits in animals depend upon the degree of cholinergic deficit and task complexity.

Pizzo DP, Thal LJ, Winkler J
Exp Neurol 177:292-305, 2002

In this study, the authors compared icv and intraparenchymal injections of 192-Saporin (Cat. #IT-01, 3.3 µg and 450 ng, respectively). While a similar reduction in choline acetyltransferase activity was observed with each strategy, and performance in certain allocentric tasks was similar, an egocentric task showed a marked difference between the two groups.