

Targeting Topics: Recent Scientific References

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also used 0.3 μl of orexin-SAP (Cat. #IT-20) at either 90 ng/ μl or 60 ng/ μl in a separate group of animals. The results indicate that orexin innervation to the pons plays a role in arousal from sleep.

Glucoprivation increases expression of neuropeptide Y mRNA in hindbrain neurons that innervate the hypothalamus.

Li AJ, Ritter S

Eur J Neurosci 19(8):2147-2154, 2004

It is suspected that hypothalamic neuropeptide Y (NPY) innervation of the hypothalamus contributes to glucoregulatory feeding. Along with mRNA studies, the authors injected 42 ng of anti-DBH-SAP (Cat. #IT-03) into the paraventricular nucleus. Elimination of the hindbrain catecholamine/NPY neurons abolished increases in NPY expression due to glucoprivic conditions. This response suggests that NPY hindbrain neurons play a role in glucoprivic feeding and other glucoregulatory responses.

Impaired and spared cholinergic functions in the hippocampus after lesions of the medial septum/vertical limb of the diagonal band with 192 IgG-saporin.

Chang Q, Gold PE

Hippocampus 14(2):170-179, 2004

192-Saporin has been widely used to eliminate cholinergic neurons in the basal forebrain. These lesions can produce near-total loss of choline acetyltransferase (ChAT)-positive neurons in the medial septum/vertical limb of the diagonal band of Broca (MS/VDB). There is evidence that this ChAT deficit produces an upregulation

of cholinergic mechanisms providing input to the hippocampus. Using either 0.2 or 0.3 μl of 0.5 $\mu\text{g}/\mu\text{l}$ 192-Saporin (Cat. #IT-01) injected into the MS/VDB the authors examined the residual release of acetylcholine in the hippocampus after lesioning.



Cognitive effects of neurotoxic lesions of the nucleus basalis magnocellularis in rats: differential roles for corticopetal versus amygdalopetal projections.

Beninger RJ, Dringenberg HC, Boegman RJ, Jhamandas K

Neurotox Res 3(1):7-21, 2001

The cholinergic hypothesis states that projections of cholinergic neurons from the nucleus basalis magnocellularis to cortical and amygdalar targets are important in memory. This review discusses the work done on the cholinergic hypothesis using non-specific lesioning agents such as ibotenate and quisqualate, and the specific targeted conjugate 192-Saporin (Cat. #IT-01). The authors conclude that cholinergic targets in both the cortex and amygdala are important for the control of memory.

Effects of isolectin B4-conjugated saporin, a targeting cytotoxin, on bladder overactivity induced by bladder irritation.

Nishiguchi J, Sasaki K, Seki S, Chancellor MB, Erickson KA, de Groat WC, Kumon H, Yoshimura N

Eur J Neurosci in press, 2004

It has been demonstrated that IB4-binding non-peptidergic C-fiber neuronal populations are present in afferent pathways to the bladder. The authors used intrathecal administration of 8 μl of 2.5 μM IB4-SAP (Cat. #IT-10) to investigate what roles these neurons play in bladder function. Treated animals displayed a reduction of IB4 afferent nerve terminal staining, as well as a suppression of bladder overactivity due to bladder irritation, without a change in normal bladder function.

Immunotoxins and neuropeptide-toxin conjugates experimental applications.

Lappi DA, Wiley RG

Mini Rev Med Chem 4(5):585-595, 2004

The use of targeted toxins in research is rich and varied; here the authors describe some of the exciting results that researchers have made in the neurosciences.

[Interaction between sensory and cognitive processes in visual recognition: the role of the associative areas of the cerebral cortex] Russian

Dudkin KN, Chueva IV, Makarov FN

Russ Fiziol Zh Im I M Sechenova 89(10):1226-1239, 2003

The authors used ME20.4-SAP (Cat. #IT-15).

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to see a complete list of references.