

Targeting Topics: Recent Scientific References

Reviewed by Matthew Kohls

Noradrenergic innervation of the dorsal medial prefrontal cortex modulates hypothalamo-pituitary-adrenal responses to acute emotional stress.

Radley JJ, Williams B, Sawchenko PE
J Neurosci 28:5806-5816, 2008.

Rats were injected with 90-120 nl of 0.475- $\mu\text{g}/\mu\text{l}$ anti-DBH-SAP (Cat. #IT-03) into the cortical field containing noradrenergic neurons that project to the dorsal medial prefrontal cortex. The results indicate that the locus ceruleus functions as an upstream component in medial prefrontal cortex modulation of hypothalamo-pituitary-adrenal activation due to emotional stress.

Vascular smooth cell proliferation in perfusion culture of porcine carotid arteries.

Liao D, Lin PH, Yao Q, Chen C
Biochem Biophys Res Commun [Epub Jun 2], 2008.

The authors used FGF-SAP (Cat. #IT-38) to help characterize a model of vascular smooth muscle cell proliferation with porcine carotid arteries. Arteries isolated from pigs were cultured under several different conditions, one of which included FGF-SAP at a concentration of 0.4 nM. In all cases the arteries maintained viability for up to 96 hours.

Neuromodulatory role of acetylcholine in visually-induced cortical activation: Behavioral and neuroanatomical correlates.

Dotigny F, Ben Amor AY, Burke M, Vaucher E
Neuroscience [Epub Apr 25], 2008.

After rats were treated with 192-IgG-SAP (Cat. #IT-01, 2 μl of 2.4 $\mu\text{g}/\mu\text{l}$ into the lateral ventricle) visual acuity and performance in a visual water maze task were analyzed. Lesioned animals displayed no loss in acuity, but were less able to learn a new orientation discrimination task.

Selective ablation of GABA neurons in the ventral tegmental area increases spontaneous locomotor activity.

Shank EJ, Seitz PK, Bubar MJ, Stutz SJ, Cunningham KA
Behav Neurosci 121:1224-1233, 2007.

To further examine the importance of the ventral tegmental area (VTA) γ -aminobutyric acid (GABA) neurons in behavioral function, the authors lesioned the VTA of rats. Animals received 1 or 2 pmol/200 nl bilateral injections of dermorphin-SAP (Cat. #IT-12); blank-SAP (Cat. #IT-21) was used as a control. Rats treated with dermorphin-SAP displayed significantly elevated motility as compared to control animals.



Oxytocin deficiency mediates hyperphagic obesity of Sim1 haploinsufficient mice.

Kublaoui BM, Gemelli T, Tolson KP, Wang Y, Zinn AR
Mol Endocrinol [Epub May 1], 2008.

Central administration of neuropeptides in the paraventricular nucleus (PVN) is known to inhibit feeding. Hypothalamic expression of several neuropeptides, including corticotrophin releasing hormone (CRH) was measured. To do so, anti-CRH (Cat. #AB-02, 1:800) was used in immunohistochemistry.

Environmental enrichment mitigates the effects of basal forebrain lesions on cognitive flexibility.

De Bartolo P, Leggio MG, Mandolesi L, Foti F, Gelfo F, Ferlazzo F, Petrosini L
Neuroscience [Epub Apr 7], 2008.

This work examines whether environmental enrichment can reduce the effect of cholinergic lesions on learning and memory tasks. Rats received 0.4- μg bilateral injections of 192-IgG-SAP (Cat. #IT-01) into the cholinergic projection to the neocortex. Deficits caused by the lesion were attenuated in rats experiencing an enriched environment.

Targeting CUB domain-containing protein 1 with a monoclonal antibody inhibits metastasis in a prostate cancer model.

Siva AC, Wild MA, Kirkland RE, Nolan MJ, Lin B, Maruyama T, Yantiri-Wernimont F, Frederickson S, Bowdish KS, Xin H
Cancer Res 68:3759-3766, 2008.

After demonstrating *in vitro* activity of the monoclonal antibody 25A11 with Mab-ZAP (Cat. #IT-04) and Hum-ZAP (Cat. #IT-22) the authors had ATS do a direct conjugation of 25A11 and saporin. Goat-IgG-SAP (Cat. #IT-19) was used as a control for *in vivo* experiments, and saporin (Cat. #PR-01) was the control *in vitro*. In treated mice, the direct conjugate significantly inhibited tumor growth as well as metastasis *in vivo*.

Selective ablation of dorsal horn NK1 expressing cells reveals a modulation of spinal alpha2-adrenergic inhibition of dorsal horn neurones.

Rahman W, Suzuki R, Hunt SP, Dickenson AH
Neuropharmacology 54:1208-1214, 2008.

In this work the spinal origin of the major descending noradrenergic inhibitory pathway is examined with the help of SP-SAP (Cat. #IT-07). Rats

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