

Targeting Topics: Recent Scientific References

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neurons, as well as selective C1 neuron stimulation in rats. Some rats also received bilateral injections of Anti-DBH-SAP (Cat. #IT-03) totaling 0.88 μg into the region of the lateral horn of the second thoracic segment.

Role of cerebrospinal fluid-contacting nucleus in sodium sensing and sodium appetite.

Xing D, Wu Y, Li G, Song S, Liu Y, Liu H, Wang X, Fei Y, Zhang C, Li Y, Zhang L. *Physiol Behav* 147:291-299, 2015.

Sodium concentration in the cerebrospinal fluid (CSF) is tightly regulated, and this regulation requires numerous sensors spread throughout the brain. Here the authors injected 900 ng CTB-SAP (Cat. #IT-14) into the lateral ventricles. Investigation of spontaneous and induced sodium intake indicates the CSF-contacting nucleus is an important link in the sodium sensing network, and interacts with the lateral parabrachial nucleus.

Inflammatory Macrophages Promotes Development of Diabetic Encephalopathy.

Wang B, Miao Y, Zhao Z, Zhong Y. *Cell Physiol Biochem* 36(3):1142-1150, 2015.

Diabetes can cause neuroinflammation leading to dementia. Diabetes was induced in mice by injection of streptozotocin (STZ). In order to investigate the role of inflammatory macrophages in the development of diabetic encephalopathy, the authors used twice weekly 20- μg IP injections of Mac-1-SAP (Cat. #IT-06). Mice receiving Mac-1-SAP had significantly reduced numbers of inflammatory macrophages in the brain, and also reduced responses to STZ injection.

Striatal patch compartment lesions reduce stereotypy following repeated cocaine administration.

Murray RC, Logan MC, Horner KA. *Brain Res* Epub2015.

Stereotypy is defined as abnormally repetitive motor movements accompanied by an inability to initiate normal adaptive responses. Psychostimulants such as cocaine will often produce these movements. It is thought that stereotypy is related to

activation of the patch compartment of the striatum. In order to better understand the function of the patch compartment in stereotypy due to repeated exposure to cocaine, the authors administered bilateral injections of Dermorphin-SAP (Cat. #IT-12) into the rostral striatum. Saporin (Cat. #PR-01) was used as a control.



Role of adrenomedullin in the cerebrospinal fluid-contacting nucleus in the modulation of immobilization stress.

Wu YH, Song SY, Liu H, Xing D, Wang X, Fei Y, Li GL, Zhang C, Li Y, Zhang LC. *Neuropeptides* 51:43-54, 2015.

The CSF-contacting nucleus (CSF-CN) is a brain structure containing neurons that can bidirectionally transmit signals between the brain parenchyma and the CSF. In order to better understand what regulatory peptides modulate this organ, the authors eliminated the CSF-CN of rats with a 500-ng icv injection of CTB-SAP (Cat. #IT-14). Saporin (Cat. #PR-01) was used as a control. The elimination of the CSF-CN worsened the response to chronic immobilization stress; with other data this information suggests that the CSF-CN uses adrenomedullin as a stress-related peptide.

Treatment Considerations for Cancer Pain: A Global Perspective.

Pergolizzi JV, Gharibo C, Ho KY. *Pain Pract* Epub2014.

This review discusses the treatment of cancer pain, addressing various aspects of the overall picture, such as early pain treatment

to reduce central sensitization and chronic pain, pain assessment tools, and guidelines for treating specific populations of patients. Some of the current tools for pain management are discussed, including SP-SAP, which is currently in clinical trials as a cancer pain therapeutic (see cover article).

Novel Mechanisms of Spinal Cord Plasticity in a Mouse Model of Motoneuron Disease.

Gulino R, Parenti R, Gulisano M. *Biomed Res Int* 2015:654637, 2015.

Here the authors investigate spinal plasticity mechanisms involving a number of different proteins, including BDNF, Shh, Notch-1, Numb, and Noggin. The model used is a mouse motoneuron depletion strategy, where the animals receive 3 μg of CTB-SAP (Cat. #IT-14) into each of the medial and lateral gastrocnemius muscles. The results indicate that TDP-43, a nuclear DNA/RNA binding protein, may be an important regulator of synaptic plasticity.

Effects of immunotoxic and electrolytic lesions of medial septal area on spatial short-term memory in rats.

Dashniani M, Kruashvili L, Rusadze Kh, Mataradze S, Beselia G. *Georgian Med News* (239):98-103, 2015.

In this work the authors investigated how essential septohippocampal projections are in a spatial working memory model. Rats received bilateral injections of 192-IgG-SAP (Cat. #IT-01, 600 ng total) or GAT-1-SAP (Cat. #IT-32, 195 ng total) into the medial septum. Saporin (Cat. #PR-01) was used as a control.

Selective lesion of gaba-ergic neurons in the medial septum by gat1-saporin impairs spatial learning in a water-maze.

Burjanadze M, Mataradze S, Rusadze K, Chkhikvishvili N, Dashniani M. *Georgian Med News* (240):59-64, 2015.

The authors investigated the role of GABAergic neurons in the medial septum on spatial learning using a Morris water maze test. Rats received bilateral injections totaling 162 ng of GAT-1-SAP (Cat. #IT-32) into the medial septum. Saporin (Cat. #PR-01) was used as a control. The lesioned animals

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