Targeting Topics: Recent Scientific References

Reviewed by Matthew Kohls

Estradiol and orexin-2 saporin actions on multiple forms of behavioral arousal in female mice.

Easton A, Dwyer E, Pfaff DW

Behav Neurosci 120(1):1-9, 2006.

Many aspects of female behavioral arousal in response to estrogens are not yet well understood. Here the authors examine the role of orexins as targets for estrogens. Female mice were treated with 10 ng of orexin-SAP (Cat. #IT-20) into each hemisphere of the lateral hypothalamus. The mice were then tested in different modes of behavioral arousal. Mice treated with orexin-SAP displayed decreases in sensory responsiveness and fearfulness concomitant with a reduction in orexin cell number.

Targeting of the receptor protein tyrosine phosphatase beta with a monoclonal antibody delays tumor growth in a glioblastoma model.

Foehr ED, Lorente G, Kuo J, Ram R, Nikolich K, Urfer R

Cancer Res 66(4):2271-2278, 2006.

The receptor protein tyrosine phosphatase ß (RPTPß) is overexpressed in astrocytomas, and is a potential target for tumor therapy. After testing antibodies against an extracellular domain of RPTPß *in vitro* with Mab-ZAP (Cat. #IT-04), two custom conjugates, 7E4B11-SAP and 7A9B5-SAP, were created by Advanced Targeting Systems. The authors tested the custom conjugates, using anti-DAT-SAP (Cat. #IT-25) as a positive control, and mouse IgG-SAP (Cat. #IT-18) as a negative control. The 7E4B11-SAP conjugate displayed significant antitumor activity in mice engrafted with U87 glioma cells.

Photochemically stimulated drug delivery increases the cytotoxicity and specificity of EGF-saporin.

Weyergang A, Selbo PK, Berg K

J Control Release 111(1-2):165-173, 2006.

In this study the authors investigated the use of photosensitizers located in endocytic vesicles that can be induced to release macromolecules upon activation by light. This process is called photochemical internalization, or PCI. Biotinylated EGF was combined with streptavidin-ZAP (Cat. #IT-27), and the compound was applied to various cell lines. The data shows that PCI increases the toxicity of EGF-saporin significantly in EGF receptor-expressing cell lines.

Prenatal glucocorticoid exposure affects learning and vulnerability of cholinergic neurons.

Emgard M, Paradisi M, Pirondi S, Fernandez M, Giardino L, Calza L

Neurobiol Aging [Epub Jan 4] , 2006.

Women at risk of preterm delivery are commonly treated with synthetic glucocorticoids such as dexamethasone and betamethasone. Here the authors examined adult rats that were prenatally exposed to glucocorticoids. After 2.5 μg intracerebroventricular injections of 192-IgG-SAP (Cat. #IT-01) or 0.44 μg of saporin (Cat. #PR-01), the rats were tested in a water maze pool. The evidence suggests that not only do prenatal glucocorticoids affect adult cognitive function, they also make cholinergic neurons more susceptible to challenges later in life.

Catecholamine neurones in rats modulate sleep, breathing, central chemoreception and breathing variability.

Li A, Nattie E

J Physiol 570(Pt 2):385-396, 2006.

Brainstem catecholamine (CA) neurons are thought to modulate the processing of sensory information and participate in the control of breathing. Using a 5 μg injection of anti-DBH-SAP (Cat. #IT-03), or a control injection of mouse-IgG-SAP (Cat. #IT-18) into the fourth ventricle, the authors investigated breathing frequency and wakefulness. The

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