Targeting Topics: Recent Scientific References

Reviewed by Matthew Kohls

High-affinity ligand probes of CD22 overcome the threshold set by cis ligands to allow for binding, endocytosis, and killing of B cells.

Collins BE, Blixt O, Han S, Duong B, Li H, Nathan JK, Bovin N, Paulson JC
J Immunol 177(5):2994-3003, 2006.

CD22, a member of the siglec subgroup of the Ig superfamily, is a potential target for immunotherapy of B cell lymphomas. The authors demonstrate that a biotinylated probe specific for CD22 combined with streptavidin-ZAP (Cat. #IT-27), can eliminate several different lymphoma cell lines.

Ameliorating effect of saporin-conjugated anti-CD11b monoclonal antibody in a murine T-cell-mediated chronic colitis.

Kanai T, Uraushihara K, Totsuka T, Nemoto Y, Fujii R, Kawamura T, Makita S, Sawada D, Yagita H, Okumura K, Watanabe M
J Gastroenterol Hepatol 21(7):1136-1142, 2006.

Using SCID mice, the authors evaluated the effects of Mac-1-SAP (Cat. #IT-06) on the development of chronic colitis. After transfer of T cells to the mice, 12.5 μg of Mac-1-SAP was injected into the intraperitoneal space. The reduction in CD4(+) T-cell infiltration of the colon, and suppression of IFNγ and TNFα production indicate that macrophages play a significant role in the pathogenesis of Crohn's disease.

Immunolesions of glucoresponsive projections to the arcuate nucleus alter glucoprivic-induced alterations in food intake, luteinizing hormone secretion, and GALP mRNA, but not sex behavior in adult male rats.

Fraley GS
Neuroendocrinology 83(2):97-105, 2006.

In this work the author looked at the role hypothalamic glucose may play in reproductive function. 42 ng of anti-DBH-SAP (Cat. #IT-03) was injected dorsal of the arcuate nucleus of rats, which were then given glucoprivic challenges. The data demonstrate the involvement of A1/C1 efferents to the ventromedial hypothalamus in glucostatic regulation of various processes.

CD70 (TNFSF7) is expressed at high prevalence in renal cell carcinomas and is rapidly internalised on antibody binding.

Adam PJ, Terrett JA, Steers G, Stockwin L, Loader JA, Fletcher GC, Lu LS, Leach BI, Mason S, Stamps AC, Boyd RS, Pezzella F, Gatter KC, Harris AL
Br J Cancer 95(3):298-306, 2006.

Renal cell carcinoma (RCC) is usually resistant to chemotherapy. The authors found a potential target for immunotherapy. An antibody against CD70 was combined with Hum-ZAP (Cat. #IT-22). The complex was then added to an RCC-derived cell-line *in vitro*, demonstrating significant killing at several different concentrations.

Cortical choline transporter function measured *in vivo* using choline-sensitive microelectrodes: clearance of endogenous and exogenous choline and effects of removal of cholinergic terminals.

Parikh V, Sarter M
J Neurochem 97(2):488-503, 2006.

The authors investigated the role of high-affinity choline transporters (CHT) in the clearance of exogenous choline, as well as choline from newly released acetylcholine. 0.085 μg of 192-IgG-SAP (Cat. #IT-01) was injected into each hemisphere of the basal forebrain of rats (mouse IgG-SAP, Cat. #IT-18, was used as a control). The results demonstrate that no matter the source, increases in choline concentrations are cleared by CHT's.

Hindbrain catecholamine neurons control multiple glucoregulatory responses.

Ritter S, Dinh TT, Li AJ
Physiol Behav Epub Jul 31, 2006.

The authors focus on mechanisms eliciting glucoregulatory responses; in particular the catecholaminergic neurons in the hindbrain. Rats received injections of anti-DBH-SAP (Cat. #IT-03) into epinephrine (E) and norepinephrine (NE) terminal areas of hypothalamus and spinal cord. The data suggest that E/NE neurons coordinate various components of the behavioral response to glucoprivation.

Lack of neurogenesis in the adult rat cerebellum after Purkinje cell degeneration and growth factor infusion.

Grimaldi P, Rossi F
Eur J Neurosci 23(10):2657-2668, 2006.

Although neurogenesis occurs in very specific areas of the mammalian brain, neural progenitors can be found in many central nervous system sites. Here the authors examined neurogenesis in the rat cerebellum. 2.2 μg of 192-IgG-SAP (Cat. #IT-01) was injected into each lateral ventricle, and some animals were given exogenous EGF, bFGF, or FGF8. In this model, the local environment was not sufficient to direct neuronal differentiation, even with the addition of growth factors.

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