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Targeting Trends

Reporting the latest news in Molecular Surgery

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Denise Higgins, Editor

ADVANCED TARGETING SYSTEMS

Cholinergic Deafferentation of the Entorhinal Cortex Impairs Working Memory for Novel, but not Familiar Stimuli in a Delayed Non-Match to Sample (DNMS) Task.

Contributed by ATS's 2003 Society for Neuroscience Poster of the Year Award Winner: Dr. Jill McGaughy, Boston University, 64 Cummington St., Boston, MA 02215 (see companion story on page 2)

Muscarinic cholinergic receptor activation in entorhinal cortex (EC) activates intrinsic depolarizing membrane currents, which cause self-sustained spiking activity in single neurons.[1] This effect may underlie delay activity and match-dependent activity changes in delayed match to sample tasks[2] and could allow accurate maintenance of novel information without dependence on synaptic modification associated with previous exposure (familiarization). Consistent with this, research in human subjects suggests that the medial temporal lobes are specifically activated during working memory for novel but not familiar stimuli,[3] and cholinergic deafferentation of the rhinal cortex in non-human primates has been shown to impair memory for trial-unique (novel) stimuli.[4] The current study tests the hypothesis that cholinergic deafferentation of the EC produces impairments in working memory for novel, but not familiar stimuli.

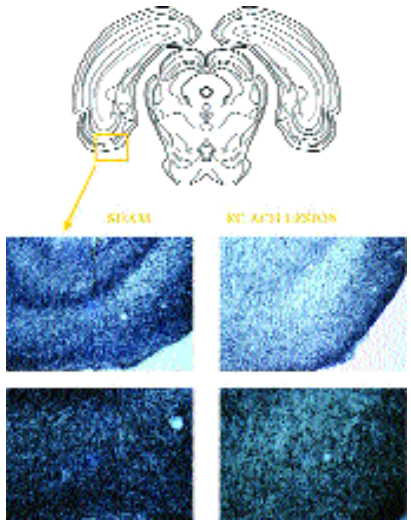

Figure 1. Acetylcholinesterase-positive fibers in the area of the EC (Bregma –7.3) for SHAM (A, C) and EC lesioned rats (B, D) at low and high magnification. The lesion produced a loss of approximately 60% of AChE fibers throughout the EC with damage centered on lateral EC.

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ATS Gets New Facility for SP-SAP Production

Progress continues to be made in moving SP-SAP closer to clinical trials as a treatment for chronic pain. The latest development is the leasing of a 3700-sq ft facility adjacent to the current ATS facility in San Diego.

This facility will be converted to GMP (Good Manufacturing Practice) space suitable for production of SP-SAP for use in Phase I/II human clinical trials. The site plan includes space for Class 10,000 clean rooms and quality control laboratories.

Early in March, the first of two GLP (Good Laboratory Practice) toxicology studies will begin. Dr. Jeff Allen will be leading this study at the University of California facility in San Diego. The UCSD toxicology studies are under the supervision of Dr. Tony Yaksh, who has expertise in the study of the effects of intrathecal delivery of pain medications.

Track progress on SP-SAP drug development on our website: www.ATSbio.com.