JAMES PAULY, Ph.D.

Assistant Professor
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Research Interests

Dr. Pauly's research interests are primarily focused on the neurobiological actions of nicotine. The CNS nicotinic cholinergic system is studied using techniques that include quantitative receptor autoradiography, quantitative in situ hybridization histochemistry, ion flux assays and behavioral analyses. Dr. Pauly's lab is currently studying 1) the effects of prenatal nicotine exposure on brain development 2) the actions of steroid hormones (adrenal and ovarian) on the number and functional status of brain nicotinic receptor subtypes 3) the role of alpha 7 nicotinic receptors in regulating responsiveness to nicotine and 4) the brain nicotinic system in neurodegenerative conditions such as Alzheimer's and Parkinson's Disease. Dr. Pauly is also interested in the use of novel radioligands for the histochemical localization of receptor subtypes in the CNS as well as peripheral tissues such as the lung and heart.

Selected Research Publications/Presentations

Pauly JR and Colline AC. An autoradiographic analysis of nicotinic cholinergic receptors following chronic corticosterone treatment. Neuroendocrinology 57:262-271, 1993.

Pauly JR, Marks MJ, Robinson SF, van de Kamp JL and Collins AC. Chronic nicotine and mecamylamine treatment increase brain nicotinic receptor binding without accompanying changes in alpha 4 or beta 2 mRNA. Journal of Pharmacology and Experimental Therapeutics 278(1):361-369, 1996.

Kapasi AA, Kumar R, Pauly JR and Pandey KN. Differential expression and autoradiographic localization of atrial naturetic peptide receptor in spontaneously hypertensive and normotensive rat testes: dimunation of testosterone in hypertension. Hypertension 28:847-853, 1996.

Barman SA, Pauly JR and Isales CM. Canine pulmonary vasoreactivity to serotonin: role of protein kinase C and tyrosine kinase. American Journal of Physiology 272:H740-H747, 1997.

Shoaib M, Schindler CW, Goldberg SR and Pauly JR. Behavioral and biochemical adaptations to nicotine in rats: influence of MK801, and NMDA receptor antagonist. Psychopharmacology, In Press.

Gattu M, Wei J, Urbanawiz SE, Pauly JR and Buccafusco JJ. Augoradiographic comparison on muscarinic M1 and M2 binding in the CNS of spontanously hypertensive (SHR) and normotensive rats. Brain Research, In Press.

Terry AV, Williamson R, Gattu M, Beach JW, McCurdy CR, Sparks JA and Pauly JR. Lobeline and structurally simplified analogs exhibit differential agonist activity and sensitivity to antagonist blockade when compared to nicotine. Neuropharmacology, In Press.