JANE STEWART, Ph.D. (LONDON)

Research

Research in my laboratory can be divided into three general areas. The first concerns the study the neurobiological mechanisms that underlie relapse to drug-taking in laboratory animals. The work is aimed at specifying how conditioned stimuli and long-lasting changes in the neurochemical and behavioral effects of drugs act to induce relapse to drug-taking in experienced animals. A second, related area of study is concerned with specifying the mechanisms that lead to long-lasting neurochemical changes that underlie sensitization to the behavioral activating effects of drugs of abuse. Here we are studying the role of neurotrophic factors in the development of these long-lasting changes.

The third area of research is concerned with the role of steroid hormones in development and aging. In particular, we are concerned with the effects of loss of estrogen on neurons and the role of neurotrophic factors in these changes.

Funding

Medical Research Council of Canada, Natural Science and Engineering Research Council of Canada, Fonds pour la Formation de Chercheurs et l'Aide la Recherche, Quebec, Canada, and National Institute of Drug Abuse (NIH), USA.

Selected Publications

Relapse to Drug Taking

Erb, S., & Stewart, J. A role for the bed nucleus of the stria terminalis, but not the amygdala, in the effects of corticotropin-releasing factor on stress-induced reinstatement of cocaine seeking. Journal of Neuroscience, 1999, 19, RC35: 1-6 Click here to view abstract

Erb S, Shaham Y, Stewart J. The role of corticotropin-releasing factor and corticosterone in stress- and cocaine-induced relapse to cocaine seeking in rats. J Neurosci. 1998, 18, 5529-5536. Click here to view abstract

Shaham Y, Erb S, Leung S, Buczek Y, Stewart J. CP-154,526, a selective, non-peptide antagonist of the corticotropin-releasing factor1 receptor attenuates stress-induced relapse to drug seeking in cocaine- and heroin-trained rats. Psychopharmacology, 1998, 137, 184-190. Click here to view abstract

Shaham Y, Funk D, Erb S, Brown TJ, Walker CD, Stewart J. Corticotropin-releasing factor, but not corticosterone, is involved in stress-induced relapse to heroin-seeking in rats. J Neurosci. 1997, 17, 2605-2614.

Click here to view abstract

Erb S, Shaham Y, Stewart J. Stress reinstates cocaine-seeking behavior after prolonged extinction and a drug-free period. Psychopharmacology, 1996, 128, 408-412. Click here to view abstract

□

Sensitization and Long-Lasting Changes in the Functioning of the Midbrain Dopaminergic System

Flores C., Samaha, A-N., & Stewart J. Requirement of basic fibroblast growth factor for amphetamine sensitization. Journal of Neuroscience. 2000, 20, RC55, 1-5 Click here to view abstract

Flores C, Rodaros D, Stewart J. Long-lasting induction of astrocytic basic fibroblast growth factor by repeated injections of amphetamine: blockade by concurrent treatment with a glutamate antagonist. J Neurosci. 1998, 18, 9547-9555. Click here to view abstract

Badiani A, Stewart J. Long-lasting sensitization to the accelerating effects of amphetamine on the speed of an internal clock. Behav Brain Res. 1999, 100, 217-223. Click here to view abstract

Emmi A, Rajabi H, Stewart J. Behavioral and neurochemical recovery from partial 6-hydroxydopamine lesions of the substantia nigra is blocked by daily treatment with D1/D5, but not D2, dopamine receptor antagonists. J Neurosci. 1997, 17, 3840-3846. Click here to view abstract

Emmi A, Rajabi H, Stewart J. Behavioral and neurochemical recovery from partial 6-hydroxydopamine lesions of the substantia nigra is blocked by daily treatment with glutamate receptor antagonists MK-801 and CPP. J Neurosci. 1996, 16, 5216-5224. Click here to view abstract

Stewart J, Rajabi H. Initial increases in extracellular dopamine in the ventral tegmental area provide a mechanism for the development of desipramine-induced sensitization within the midbrain dopamine system. Synapse. 1996, 23, 258-264. Click here to view abstract

Badiani A, Jakob A, Rodaros D, Stewart J. Sensitization of stress-induced feeding in rats repeatedly exposed to brief restraint: the role of corticosterone. Brain Res. 1996, 710, 35-44. Click here to view abstract

Altier N, Stewart J. Dopamine receptor antagonists in the nucleus accumbens attenuate analgesia induced by ventral tegmental area substance P or morphine and by nucleus accumbens amphetamine. J Pharmacol Exp Ther. 1998, 285, 208-215. Click here to view abstract

□

Hormones, Brain and Behavior

Stewart, J., & Rodaros, D. The effects of gonadal hormones on the development and expression of the stimulant effects of morphine in male and female rats Behav. Brain Res. 1999, 102, 89-98. Click here to view abstract

Flores, C., Salmaso, N., Cain, S., Rodaros, D., & Stewart, J. Ovariectomy of adult rats leads to increased expression of astrocytic basic fibroblast growth factor in the ventral tegmental area and in dopaminergic projection regions of the entorhinal and prefrontal cortex. J. Neurosci. 1999, 19, 8665-8673. Click here to view abstract

Kolb B, Stewart J. Changes in the neonatal gonadal hormonal environment prevent behavioral sparing and alter cortical morphogenesis after early frontal cortex lesions in male and female rats. Behav Neurosci. 1995, 109, 285-294. Click here to view abstract

Reviews

Altier, N., & Stewart, J. The role of dopamine in the nucleus accumbens in analgesia. . Life Sciences 1999, 65, 2269-2287. Click here to view

Stewart, J. How does incentive motivational theory apply to sexual behavior? In J. Bancroft (Ed.), The pharmacology of sexual function and dysfunction. Proceedings of the Esteve Foundation Symposium VI. Amsterdam: Excerpta Medica, Elsevier, 1995, pp. 3-11.

Stewart, J., & Badiani, A. Tolerance and sensitization to the behavioral effects of drugs. Behavioural Pharmacology, 1993, 4, 289-312.

Stewart, J. Neurobiology of conditioning to drugs of abuse. Ann N Y Acad Sci. 1992, 654, 335-46.

Stewart, J. Conditioned stimulus control of the expression of sensitization of the behavioral activating effects of opiate and stimulant drugs. In I. Gormezano & E.A. Wasserman (Eds.), Learning and Memory: Behavioral and Biological Substrates, Hillsdale, NJ: Lawrence Erlbaum Publishers, 1992, pp. 129-151.

Stewart, J., de Wit, H., & Eikelboom, R. Role of unconditioned and conditioned drug effects in the self-administration of opiates and stimulants. Psychological Review, 1984, 91, 251-268.

[Psychology Home Page] * [Concordia Home Page]