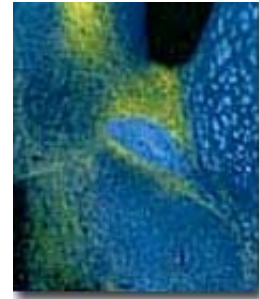




## Huda Akil Ph.D.

Professor  
Senior Research Scientist and co-Director, Mental Health  
Research Institute  
Department of Psychiatry  
2060 Mental Health Research Institute 0720  
Ann Arbor, MI 48109  
(734) 763-3770  
[akil@umich.edu](mailto:akil@umich.edu)



 [Download](#) this page

### Research Interests

The Akil Laboratory focuses on two research areas: the brain biology of stress and depression, and the biology of endorphins and other molecules related to substance abuse. In each of these areas, the lab takes a broad based approach, examining the system at a cellular, molecular and integrative level. In studying stress and mood disorders, the Akil Laboratory and the Watson Laboratory have described the brain circuits which underly responses to stress and the termination of the stress response, as well as the specific molecules expressed within these circuits. The group has recently focused on differences in brain responses as a function of the subject's ability to control the stressful situation. In human studies, the endocrine dysregulation seen in depressed subjects has been the subject of intensive investigation. More recently, the differential impact of a social stressor on depressed subjects versus controls is being investigated.

In the arena of endorphins, the Akil-Watson group has cloned two of the opioid receptors, and is actively involved in studying their unique pharmacology, their expression, their molecular structure, and their involvement in specific circuits which contribute to the development and maintenance of addictive behavior. The feature which most clearly characterizes this research approach is the integration of numerous tools and research strategies in an effort to understand the biological bases of emotional behavior and to use this understanding to approach the study of human emotions, in both health and disease.



Watson, S.J. and Akil, H.: Gene chips and arrays revealed: A primer on their power and their uses. *Biol. Psychiatry* 45(5): 533-543, 1999.

Lopez, J.F., Akil, H. and Watson, S.J.: Role of biological and psychological factors in early development and their impact on adult life: Neural circuits mediating stress. *Biol. Psychiatry* 46:1461-1471, 1999

Day, H.E.W., Curran, E.J., Watson, S.J. and Akil, H.: Distinct neurochemical populations in the rat central extended amygdala and bed nucleus of the stria terminalis: Evidence for their selective activation by interleukin-1. *J. Comp. Neurol.* 413:113-128, 1999.

Akil, H. and Watson, S.J.: Science and the future of psychiatry. *Arch. Gen. Psychiatry* 57:86-87, 2000.

Young, E.A., Lopez, J.F., Murphy-Weinberg, V., Watson, S.J., Akil, H.: Hormonal evidence for altered responsiveness to social stress in major depression. *Neuropsychopharmacology.* 23:411-8, 2000

Meng, F., Wei, Q., Hoversten, M.T., Taylor, L.P., Akil, H.: Switching agonist/antagonist properties of opiate alkaloids at the delta opioid receptor using mutations based on the structure of the orphanin FQ receptor. *Journal of Biological Chemistry.* 275:21939-45, 2000

Kabbaj, M., Devine, D.P., Savage, V.R., Akil, H.: Neurobiological correlates of individual differences in novelty-seeking behavior in the rat: differential expression of stress-related molecules. *Journal of Neuroscience.* 20(18):6983-8, 2000

Bonner, G., Meng, F., Akil, H.: Selectivity of mu-opioid receptor determined by interfacial residues near third extracellular loop. *European Journal of Pharmacology.* 403:37-44, 2000

Day, H.E., Badiani, A., Uslaner, J.M., Oates, M.M., Vittoz, N.M., Robinson, T.E., Watson, S.J. Jr. Akil, H.: Environmental novelty differentially affects c-fos mRNA expression induced by amphetamine or cocaine in subregions of the bed nucleus of the stria terminalis and amygdala. *Journal of Neuroscience (Online).* 21:732-40, 2001

Devine, D.P., Watson, S.J., Akil, H.: Nociceptin/orphanin FQ regulates neuroendocrine function of the limbic-hypothalamic-pituitary-adrenal axis. *Neuroscience.* 102:541-53, 2001

Find more publications by [Dr.Huda Akil](#)

Last updated 8/14/2004 Click here to [update](#)

03047