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Editorial

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Molecular and cellular neuroscience explores the genes and proteins

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Editorial

Homer proteins mediate molecular rearrangements leading to changes in spine morphology. This points to a role of Homer in learning and memory. Homer 1c features both the ligand binding domain and a coiled–coiled domain for self-multimerization. Cellular and molecular neuroscience is one of the newest and fastest growing subdisciplines in neuroscience. By investigating the influences of genes, signaling molecules, and cellular morphology, researchers in this field uncover crucial insights into normal brain development and function, as well as the root causes of many pathological conditions. Neuroscience is inherently interdisciplinary in its quest to explain the brain.

Like all biological structures the brain operates at multiple levels, from nano-scale molecules to meter-scale systems. At the University of Utah, a highly interactive group of department faculty is investigating the cellular mechanisms underlying the actions of psychostimulants, including methamphetamine, amphetamine and cocaine, and the dynamics of brain neurotransmitter and neuropeptide systems. Molecular neuroscience is a branch of neuroscience that examines the biology of the nervous system with molecular biology, molecular genetics, protein chemistry and related methodologies. Research looks at how neurons behave in relation to emotions.

Molecular and Cellular Neuroscience publishes original research of high significance covering all aspects of neurosciences indicated by the broadest interpretation of the journal's title. In particular, the journal focuses on synaptic maintenance, de- and re-organization, neuron-glia communication, and de-/regenerative neurobiology.

In addition, studies using animal models of disease with translational prospects and experimental approaches with backward validation of disease signatures from human patients are welcome. Molecular and Cellular Neuroscience publishes original research of high significance covering all aspects of neurosciences indicated by the broadest interpretation of the journal's title.

In particular, the journal focuses on synaptic maintenance, de- and re-organization, neuron-glia communication, and de-/regenerative neurobiology. Molecular and Cellular Neuroscience publishes original research of exceptional significance from those areas of the neurosciences indicated by the broadest interpretation of the journal title. In particular, the journal focuses on synaptic maintenance and organization, neuron-glia communication and regenerative neurobiology.

Molecular and Cellular Neuroscience publishes original research of high significance covering all aspects of neurosciences indicated by the broadest interpretation of the journal's title. In particular, the journal focuses on synaptic maintenance, de- and re-organization, neuron-glia communication, and de-/regenerative neurobiology. Alcohol use and abuse appear to be related to neuroadaptive changes at functional, neurochemical, and structural levels.

The discovery of Antennapedia (Antp)-mediated transduction of heterologous proteins into cells in 1992 and other “Trojan horse peptides” raised hopes that often-frustrating attempts to deliver proteins would now be history. Brain chromatin remodeling due to histone covalent modifications may also be involved in mediating the behavioral effects and neuroadaptive changes that occur during ethanol exposure.

This review outlines progressive neuroscience research into molecular and epigenetic mechanisms of alcoholism. Alcohol addiction is a chronic relapsing disorder and is characterized by repetitive alcohol drinking patterns leading to a loss of control over alcohol consumption. Two major psychiatric states have been implicated in the development of alcoholism, namely the positive and negative affective states of alcohol abuse. The positive affective state describes the euphoric effects of alcohol that lead to the promotion of alcohol consumption.

Chemical, Molecular & Cellular Neuroscience is a branch of neuroscience that examines the biology of the nervous system with molecular biology, molecular genetics, protein chemistry and related methodologies. Molecular biology studies how deoxyribonucleic acid (DNA) forms ribonucleic acid (RNA) which makes protein. When molecular biology is studied to gain understanding of the nervous system, then this is the basis of molecular neuroscience.

The goals of those studying cellular neuroscience are to describe the structural properties of these channels and pumps, the basis of their chemical and electrical control mechanisms, their function on individual neurons and synapses, and their spatial localization on cells. Methods include microelectric recordings from individual cells, advanced microscopic methods, immunocytochemistry, and the biochemical and molecular methods common to all studies of protein function.

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