

Transcription factor Δ FosB-induced changes in the brain in response to drugs of abuse

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Abstract

Drugs of abuse e.g. heroin or cocaine appear to cause behavioral abnormalities that persist long after the drugs are discontinued. There is overwhelming evidence to support that the truncated FosB protein known as Δ FosB, once induced by drugs of abuse, possesses biochemical properties that afford it the ability to sustain and accumulate in neurons long after the drug of abuse is discontinued. The transcription factor Δ FosB then acts as a molecular switch that activates and represses other genes that affect dopamine regulation and neuron plasticity, which rewires the brain to be more motivated toward drug seeking behavior. In this presentation the properties and actions of Δ FosB are reviewed and possible genetic therapies are proposed to address the neurobiological factors involved in addiction.

Biography

John K. Grandy Has completed a degree in biology at Canisius College with a minor in anthropology, a masters of science degree doing cancer research at Roswell Park Cancer Research with concentrations in neurophysiology and molecular immunology, and a medical degree as a physician assistant at D'Youville College; all three at Buffalo, New York. He has published articles in medicine, genetics, and on consciousness. He has lectured at Harvard University, the Imperial College of London, Stockholm University, Las Vegas Nevada, and Belgrade University. Currently, he practices medicine as a subcontractor at Fort Drum U.S. Army Base and part time at North Country Urgent Care.