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### **Relevance of animal models in affective disorders research**

According to the World Health Organization, mental disorders are one of the leading causes of disability in the US and worldwide. However, several challenges exist in the treatment of these disorders. First of all, diagnosis is difficult, especially in the young and the elderly, and the course of the disease can get complicated when the patient suffers from additional chronic conditions. Secondly, even when appropriate medications exist, a large number of patients do not receive treatment or are found to be treatment resistant. Thirdly, the neurochemical basis underlying the pathophysiology of the disorders is not well known, and our current understanding of these disorders is largely based on animal models.

Exposure to stress triggers a complex array of physiological, behavioral and neurochemical processes in order to promote homeostatic adaptation to the stressful stimuli. Repeated and chronic stressors pose a risk for psychiatric ailments, affecting our daily performance, and leading to a high public health burden. Appropriate animal models are therefore required for exploring the underlying neural mechanisms of stress, and for the screening of new therapeutic agents.

We and other researchers have reported on the use of the Wistar-Kyoto rat strain in the study of several neuropsychiatric disorders. When Wistar-Kyoto rats are exposed to stress stimulation, they respond with behaviors that resemble human depressive behaviors, such as anhedonia, psychomotor retardation, ambivalence and negative memory bias. Following stress manipulations and treatment, autoradiography analyses have revealed significant alterations in neurotransmitter receptors in limbic brain regions.

This presentation will review the utility of the Wistar-Kyoto animal model for furthering our understanding of the pathogenesis of affective disorders. Although potential problems and limitations exist in translating animal findings to human conditions, such comparisons are necessary for advancing our understanding of the mechanisms, and for developing improved interventions for these disorders.

### **Biography**

Shanaz Tejani-Butt is a Professor in the department of Pharmacology and Toxicology at the University of the Sciences in Philadelphia. Dr. Tejani-Butt's research interests include the neurobiological mechanisms associated with the regulation of biogenic amines in an animal model of depressive behavior, implications of these biogenic amines in modulating stress and reward, and therapeutic action of psychiatric drugs. Dr. Tejani-Butt has been a recipient of numerous research grants, and served as a Grant Reviewer for the National Institute of Health. Shanaz Tejani-Butt received her PhD in Medicinal Chemistry from the Medical College of Virginia, her MS in Organic & Natural Product Chemistry and BS in Chemistry and Microbiology from the University of Bombay. She received her MBA degree in Healthcare Business from the Mayes College of the University of the Sciences.