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# Studies on the neurological effects of propionic acid alone and in combination with antioxidants/antibiotics in hamsters

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## Abstract

Autism is a disorder characterized by abnormal neural development, difficulty in communication and social interaction, repetitive and disordered movements, hyperactivity, sensory disturbances, and sometimes self injury. Propionic acid (PA) found in some foods and formed as a metabolic product of gut bacteria has been reported to mimic/mediate the effects of autism. This study was undertaken to study the effect of exogenous PA on neurotransmitters in hamsters. Clindamycin an antiobiotic known to inhibit most of microbial flora was administered to hamsters to study the effect of depletion of PA producing bacteria on neurotransmitters in hamsters. PA administration caused significant a decrease in the neurotransmitters in the brains of treated hamsters. Antibiotic clindamycin which has been reported to eliminate the enteric bacteria caused a significant decrease only in dopamine in hamster brains (cortex and medulla) and gamma amino butyric acid in the cerebral cortex of the treated hamsters. Carnosine and carnitine which are known antioxidants caused no significant changes in the levels of neurotransmitters when administered alone to hamsters. However when administered with PA both carnosine and carnitine tended to restore the levels of altered neurotransmitters to near normal levels.

## Biography

N.J. Siddiqi completed her PhD from Dr RML Awadh University, Faizabad, India. N. J. Siddiqi is currently a professor of biochemistry at College of Science, King Saud University, Riyadh, Saudi Arabia. She has published many papers in reputed journals and serves as a reviewer of many journals.