Short Communication

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Selective Neuronal and Brain Regional Expression of IL-2 in IL2P 8-GFP Transgenic Mice: Relation to Sensorimotor Gating

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Abstract

Brain-derived interleukin-2 (IL-2) has been implicated in diseases processes that arise during CNS development (e.g., autism) to neurodegenerative alterations involving neuroinflammation (e.g., Alzheimer's disease). Progress has been limited, however, because the vast majority of current knowledge of IL-2's actions on brain function and behavior is based on the use exogenously administered IL-2 to make inferences about the function of the endogenous cytokine. Thus, to identify the cell-type(s) and regional circuitry that express brain-derived IL-2, we used B6.Cg-Tg/ IL2-EGFP17Evr (IL2p8-GFP) transgenic mice, which express green fluorescent protein (GFP) in peripheral immune cells known to produce IL-2. We found that the IL2-GFP transgene was localized almost exclusively to NeuN-positive cells, indicating that the IL-2 is produced primarily by neurons.

We found that congenic mice devoid of IL-2 gene expression in both the brain and the peripheral immune system, exhibited a modest alteration of PPI. These finding suggest that IL2p8-GFP transgenic mice may be a useful tool to elucidate further the role of brain-derived IL-2 in normal CNS function and disease.

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Biography

Dr. John Michael Petitto is Co-Vice Chair for Research at the Department of Psychiatry, University of Florida, USA. He is a Professor at Department of Psychiatry, Neuroscience, Pharmacology and Therapeutics at McKnight Brain Institute. He has completed his MD from University of North Carolina in 1987. He also did his post doc work at National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), (NIH) focusing on Neuroimmunology. He is a member of many scientific societies. He is an Editorial Board member & prompt reviewer of many Journals.