

Lay Summary

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Oligodendrocyte markers in bipolar disorder

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Lysyl Oxidase (LOX) is an extracellular enzyme that is important for the formation and maintenance of the extracellular matrix (ECM). Disruption of Lox expression and/or activity results in fibrosis. Lox is expressed in the Central Nervous System (CNS) in the vasculature and is up-regulated in various neurodegenerative diseases such as Alzheimer's Disease (AD) and Amyotrophic Lateral Sclerosis (ALS). Our data using experimental animals has identified Lox as present in the brain in the rodent. Microarray analysis identified Lox as one of the most downregulated gene affected by Lithium.

In this study we aim to label Lox and Gfap to identify if there is any change in the expression in this tissue and/or there is a morphological change in astrocytes by examining brain tissue from Bipolar disorder who have been treated with Lithium compared to aged matched control. We aim to determine whether Lithium decreases Lox expression in human brain and relate this to the changes in neurons, astrocytes and the vasculature.