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Depression and anxiety in a mouse model of Sjögren's syndrome

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Lay Abstract

Depression, anxiety and fatigue commonly complicate the clinical course of Sjögren's syndrome. Individuals often complain of decreased motivation and lack of enjoyment of life. These symptoms occur in approximately two thirds of patients with Sjögren's syndrome during the course of their disease. It is important to recognize that this is an important clinical feature of Sjögren's syndrome and seek treatment. However, drug therapy used to treat depression may also worsen their dryness. In this proposal we plan to study depression and anxiety in a mouse model of Sjögren's syndrome. The outcome of the proposed research will help researchers and clinicians understand the cause of psychiatric symptoms in patients with Sjögren's syndrome and to develop selected antidepressant treatments that do not increase dryness.

Scientific Abstract

Anxiety disorders and depression are common accompaniments of autoimmune diseases. Sjögren's syndrome is a prototypic autoimmune disease that can occur alone (primary) or in conjunction with other autoimmune diseases (secondary Sjögren's). Depression, anxiety and fibromyalgia are frequent comorbid illnesses with primary and secondary Sjögren's syndrome. Moreover, their pathogenesis is still unknown. Transgenic mice that overexpress the cytokine B-cell activating factor (BAFF) develop an autoimmune disease similar to Sjögren's syndrome. In addition, BAFF appears to be linked to other autoimmune diseases.

In this proposal, we plan to investigate whether BAFF transgenic mice display abnormal emotional behaviors. In addition, we will test whether BAFF transgenic mice have impairment of hippocampal adult neurogenesis and hippocampal synaptic plasticity. These results will have implications for understanding the biochemical basis of anxiety and depression associated with neuroinflammation and to develop new therapeutic targets for treating neuropsychiatric symptoms associated with Sjögren's syndrome.