Catalytic autoantibodies against myelin basic protein (MBP) isolated from serum of autistic children impair *in vitro* models of synaptic plasticity in rat hippocampus

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Abstract

Autoantibodies from autistic spectrum disorder (ASD) patients react with multiple proteins expressed in the brain. One such autoantibody targets myelin basic protein (MBP). ASD patients have autoantibodies to MBP of both the IgG and IgA classes in high titers, but no autoantibodies of the IgM class. IgA autoantibodies act as serine proteinases and degrade MBP *in vitro*. They also induce a decrease in long-term potentiation in the hippocampi of rats either perfused with or previously inoculated with this IgA. Because this class of autoantibody causes myelin sheath destruction in multiple sclerosis (MS), we hypothesized a similar pathological role for them in ASD.

Keywords

Autism; Autoimmunity; Myelin basic protein; Protease antibodies; Synaptic plasticity; Rat hippocampi