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ORAL ABSTRACTS

DNA hydrolysing antibodies in schizophrenia and bipolar disorder

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Recent studies evidently indicate an immune dysregulation in major psychosis disorders - schizophrenia and bipolar disorders. Varying levels of cytokines, chemokines, and immune cells with a low-grade inflammation are predominantly observed in these neurological disorders. Studies describe that the immune dysfunction is parallel to autoimmune disease mechanism, due to the occurrence of self-reacting antibodies against neurotransmitter receptors, neuronal proteins and nuclear antigens. To understand the presence of autoimmune feature, if any, in major psychosis disorders, the molecular features of IgG Abs were studied, because most of the autoimmune diseases IgG Abs have intrinsic catalytic properties. It is proven with evidence that IgG Abs from autoimmune patients have proteolysis and DNA nicking functions apart from the affinity to self-antigens.

In our study, IgG Abs were recovered from the serum of schizophrenia (n=23) and bipolar disorders (n=25), in a single step under non-denaturing condition using CIM® monolith disks coupled to L-Histidine, a pseudo bioaffinity ligand. The positive control, SLE with CNS patients (n=5) and normal controls (n=10), as negative control were included in the study to bring out autoimmune commonality. The recovered IgG Abs were subjected to DNA hydrolysis activity using plasmid DNA, pUC18, as substrate. The outcome of study revealed a strong DNA nicking activity by the IgG Abs from major psychosis disorder samples and it closely overlapped with the SLE-CNS samples, while the same was not observed in normal control samples.

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