Immunoassay for the detection of autoimmune encephalitis autoantibodies

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In patients suffering from autoimmune encephalitis, immunological dysregulation leads to the formation of autoantibodies that attack the patient's nervous system and damage nerve cells resulting in functional disorders of the brain. The autoantibodies are often directed against receptors, channels or other proteins of the nerve cells. As the symptoms of this disease are often similar to those of other neurological and mental illnesses, diagnosis is difficult and is often made late or not at all.

Successful treatment of the disease is possible with cell-based immunotherapies in which the patient's own cells are modified in such a way that the production of autoantibodies is prevented. To achieve this, patients must be identified as early as possible to prevent long-term damage caused by autoimmunity. To this end, robust assays for autoantibody detection with high sensitivity and specificity are required for diagnosis and therapy monitoring. Current tests are often based on complex cell-based procedures, whereby the results are often subjective and standardization is hardly possible. A new test is urgently needed for clinical routine. Therefore, the researchers will develop a test that overcomes the current limitations in the diagnosis of autoimmune encephalitis and that is suitable for identifying patients for targeted cell-based therapies.