SIA Preclinical Services in Drug Development

In-vivo EAE Models of Multiple Sclerosis

Multiple sclerosis (MS) is one of the most common neurological disorders, causing gradual damage to the central nervous system (CNS). In the course of MS, an autoimmune response damages the myelin sheath. This damage disrupts the ability of parts of the nervous system to communicate, resulting in a wide range of clinical and pathological phenotypes.

Experimental autoimmune encephalomyelitis (EAE) is an induced inflammatory autoimmune, demyelinating disease model in mouse or rat. EAE pathology closely resembles that of Multiple Sclerosis. EAE model recapitulates the progression and symptoms of the human neurological disease of MS.

SIA provides full services for the evaluation of test article efficacy in EAE Models of Human Multiple Sclerosis.

EAE-MBP model in rats

Remitting-Relapsing EAE is induced in rats by immunization with myelin basic protein (MBP). MBP-induced EAE is an acute monophasic paralytic central nervous system disease, which develops during a period of two weeks and is accompanied by severe CNS inflammation, with little or no demyelination.

The neuropathological lesions are found mainly in the spinal cord and brain stem. The affected animals develop hind limb paralysis. EAE lesions are characterized by edema, infiltration of mononuclear cells, and gliosis. The majority of rats display spontaneous recovery from paralysis within 7-10 days and remain resistant to the development of EAE

with subsequent immunizations with MBP. The EAE-MPB model is beneficial for the studies in the field of acute CNS inflammation.

Study Design: Studies using the EAE-MBP model in Lewis rats may be completed within 30 days from disease induction. The treatment can be delivered either prophylactically, before clinical signs appearance or at the disease onset for evaluating therapeutic potential. Mice are weighed and scored for clinical signs and severity of EAE daily. Study termination, at day 40 with CO_2.

Measurements along the Study:

- Animal body weight measured daily.
- Clinical score is measured by observation of paralysis in mice by an experimenter blinded to the treatment group.

End of Study Sample Collection and Analysis- Optional Upon Request:

- Tissue collection: blood, spinal cords, brains, cerebro-spinal fluid (CSF), lymph nodes, spleen cells.
- Cytokine production analysis – ELISA
- Analysis of T cell functions in vitro (antigen re-stimulation)

Please notice that, treatment and sample collection protocols are being coordinated and fully optimized to our customers' specific needs.

Contact Information

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