InnoSer | a smart road to better health

Model Webpage

Immunology Mouse Models

Thoroughly Evaluate the Efficacy of Your Therapeutic Candidates with InnoSer's Immunology Services

InnoSer provides you with an **integrated immunology portfolio spanning from in vitro to in vivo research services.** InnoSer works with well-published in vitro and in vivo models relevant for multiple indications ranging from hypersensitivity, inflammatory, to autoimmune diseases. By choosing InnoSer as your partner CRO, you will work alongside our expert study directors who take a collaborative approach for your study, accommodating your study timelines and budget needs. InnoSer's immunology expert team possesses relevant experience in working with multiple therapy types ranging from novel delivery methods, vaccines, small molecules, biologics to cell and gene therapy approaches. Complemented by our pharmacology expertise (such as target validation, biomarker identification, and validation, as well as PK/PD profiling), the InnoSer team works with you to confidently demonstrate the safety and efficacy profile of your novel investigational compound.

Evaluate the Efficacy of Your Compound Through Key Endpoints

Consult the available readouts

Thoroughly test your compound's efficacy with tailored readout options, providing you with translationally relevant insights to confidently advance your compound to clinical testing.

With flexible study designs and rapid start times, InnoSer neurology study experts take a collaborative approach when it comes to your research needs.

Biotechnical capabilities

- Tissue distribution and organ accumulation (BLI)
- Local and systemic tolerance: Clinical scoring, blood parameters, muscle thickness via calipers, histopathology
- Tissue damage and disease progression via histopathology
- Blood and/or serum collection for PK/PD profiling and/or immune cell profiling via flow cytometry

Analyses

- Serum concentration, half-life, clearance, target engagement, and biomarkers
- Antibody titers, T-cell responses, cytokine profiles, and memory cells
- Dose-response curve, optimal dose, and safety
- Survival rate and immune protection correlates
- Immune cell and/or cytokine levels (e.g., IL-2, IFN-γ, TNF-α) via ELISA or multiplex assays (MSD)

Delayed-type Hypersensitivity (DTH) Mouse Models

Assess the efficacy of immunomodulatory or immunosuppressive compounds

The DTH mouse model represents a relatively quick and useful approach for evaluating the efficacy of potential immunomodulatory or immunosuppressive compounds to modulate the cellular immune response, primarily Th1 and Th17 type responses. Delivery of the antigen can occur through subcutaneous injection, topical administration or via the gut (*see also* DSS-induced IBD model).

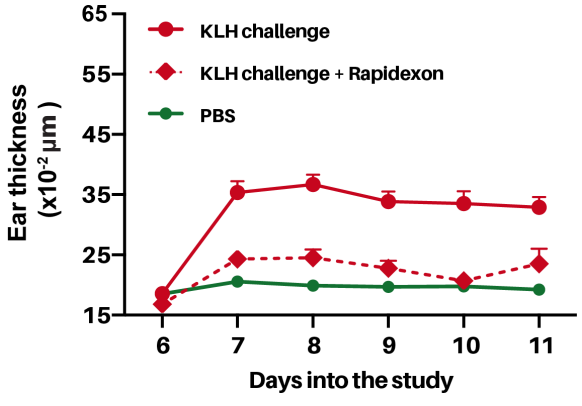

FIGURE 1. KLH-induced DTH mouse model. Mice were sensitized with KLH/CFA/IFA emulsion and challenged with KLH and PBS injections. Treatment with Rapidexon served as a positive control for KLH hypersensitivity.

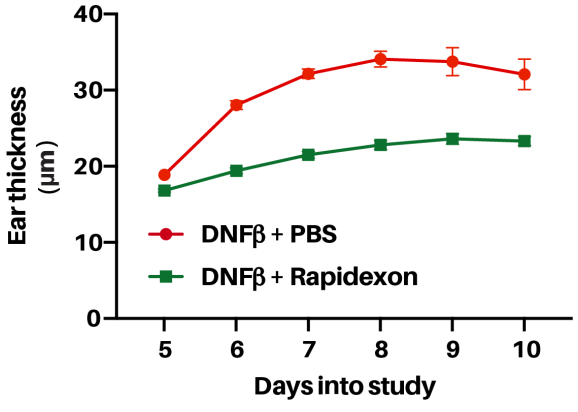

FIGURE 2. DNFβ-induced DTH mouse model. Mice were sensitized with 0.5% DNFB on day 0 and elicited on day 5. Ear thickness was measured from day 5 to day 10. Treatment with Rapidexon significantly reduced ear thickness compared to PBS control.

Il-23 Induced Psoriasis Mouse Model

Perform quick efficacy tests to evaluate your novel psoriasis treatment strategies using the acute psoriasis mouse

The acute psoriasis model, created by intradermal ear injections of recombinant IL-23, leads to acute skin inflammation. IL-23, a key cytokine, promotes pathogenic lymphocytes that drive keratinocyte differentiation and inflammation, hallmarks of psoriasis. This model mimics key psoriasis features, such as inflammatory cell infiltration, epidermal hyperplasia, and activation of inflammatory pathways.

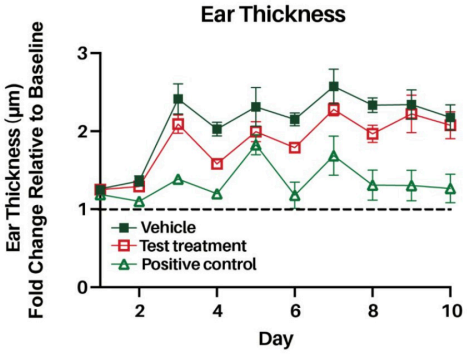

FIGURE 1. Ear thickness increases in response to IL-23 treatment. Ear thickness increased in the IL-23 control (vehicle) group following IL-23 injection.

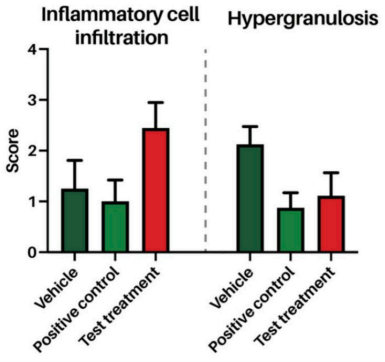

FIGURE 2. Scoring of psoriasis-like lesions reveals increase in inflammatory cell infiltration and hypergranulosis.

IBD Mouse Models

Boost the development of your novel treatment to improve gut health in individuals with IBD

InnoSer offers a range of validated IBD mouse models, including chemically induced, adoptive transfer, and transgenic mouse models. Each model mimics specific aspects of IBD, allowing you to study the efficacy of different therapeutic mechanisms of action, such as reducing inflammation, epithelial repair, microbiome targeting, and innate and/or adaptive immunity modulation.

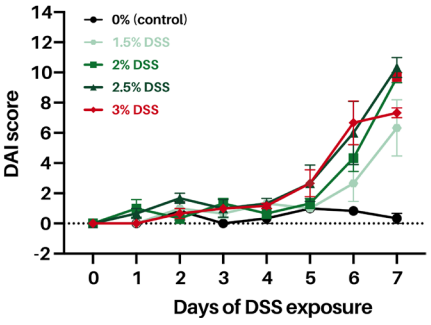

FIGURE 1. DSS administration in drinking weight causes progressive increase in DAI score. C57BL/6 male mice were given no treatment, control), or DSS in varying concentrations (1.5%, 2%, 2.5% and 3%) in drinking water.

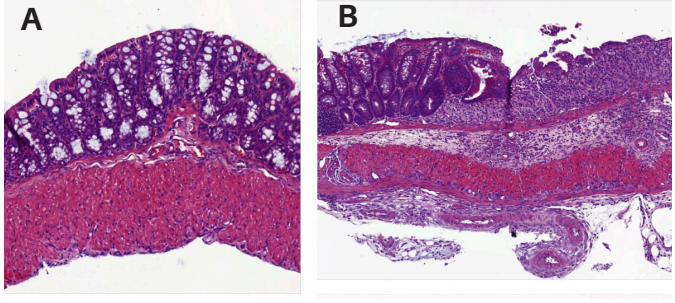

FIGURE 2. Colons of mice treated with DSS show inflammation, decrease in crypt depth, epithelial cell loss, decrease in villus height and villus perimeter(A: healthy vs B: DSS-induced mouse colon).

EAE Mouse Model

Investigate your compound's efficacy on the inflammation and immune component of Multiple Sclerosis

Active EAE mouse model is induced by immunization with antigens such as myelin-oligodendrocyte protein (MOG), myelin basic protein (MBP) or proteolipid protein (PLP) together with Complete Freund's adjuvant (CFA) accompanied by an intraperitoneal injection of pertussis toxin (PTX) on the day of immunization and two days later.

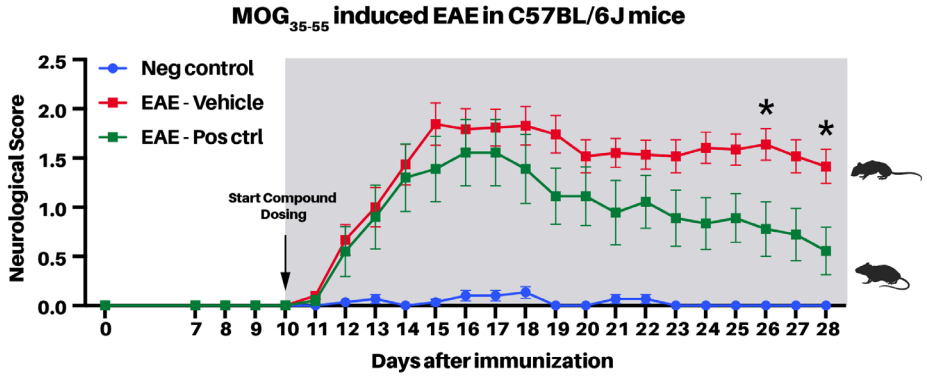

FIGURE 1. MOG_{35-55} immunization in female 8-week-old C57BL/6J mice results in robust and severe acute monophasic, demyelination with peak disease (maximum EAE scores) onset 10-14 days after immunization. Accordingly, EAE mice treated with an immunomodulator showed a significant decrease in disease severity on day 26 and 28 ($*P<0.05$) compared to vehicle-treated (0.25% DMSO in PBS) EAE-induced mice. Immunomodulator treatment was administered therapeutically on day 10 after MOG35-55 immunization and dosed daily pre os (PO).