

## 270-ISMS07 **ASP7266, a Novel Antibody against Human Thymic Stromal Lymphopoietin Receptor, in the Treatment of Allergic Disease**

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Thymic stromal lymphopoietin (TSLP) is considered a “master switch” for allergen-induced inflammation. TSLP signal inhibitors are promising therapeutic options for the treatment of allergen-induced inflammation. Here, we investigated the pharmacological effects of ASP7266, a novel recombinant human immunoglobulin G1 monoclonal antibody targeting the TSLP receptor (TSLPR).

ASP7266 bound to human TSLPR with an equilibrium dissociation constant of 0.470 nmol/L. In an *in vitro* assay with human peripheral blood cells, ASP7266 inhibited TSLP-induced chemokine (C-C motif) ligand (CCL)17 mRNA expression with an IC<sub>50</sub> of 6.90 ng/mL. ASP7266 also inhibited human TSLP-stimulated myeloid dendritic cell-mediated differentiation of naive CD4<sup>+</sup> T cells into mature T cells in an *in vitro* assay. ASP7266 bound to monkey TSLPR, but not to mouse or rat TSLPR. ASP7266 inhibited TSLP-induced CCL17 mRNA expression in monkey peripheral blood cells with an IC<sub>50</sub> of 55.7 ng/mL. The relationship between the pharmacokinetics and pharmacodynamics of ASP7266 was evaluated in cynomolgus monkeys. On intravenous administration to monkeys, ASP7266 at doses of 0.1 mg/kg and greater blocked CCL17 mRNA expression by at least 89% in peripheral blood cells on day 9 after administration. The pharmacological effect of ASP7266 was studied in a cynomolgus monkey model of ascaris extract-induced skin allergic reaction. ASP7266 suppressed ascaris extract-induced skin allergic reactions in sensitized monkeys.

ASP7266 is a novel human antibody against TSLPR that warrants evaluation as a therapeutic option for patients with allergic diseases. ASP7266 has been evaluated in a phase I clinical trial.