Long-term laboratory safety study of lokivetmab (ZTS-00103289), a caninized, anti-canine IL-31 monoclonal antibody, in normal dogs.

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Lokivetmab is a caninized, anti-canine interleukin-31 (IL-31) monoclonal antibody (mAb) as a treatment for dogs with atopic dermatitis. This laboratory study demonstrated the long-term consequences of lokivetmab binding to IL-31, inhibition of constitutive IL-31 signaling, and the systemic and immune responses to repeated administrations of this mAb. Laboratory Beagle dogs were randomized to three groups (n = 6M/6F per group) and administered seven monthly subcutaneous (SC) doses of 0.9% saline or lokivetmab (3.3, or 10 mg/kg). The study complied with GLP and local, national, and international animal welfare regulations. Clinical assessments, clinical pathology evaluations (hematology, coagulation, serum chemistry, urinalysis), and lokivetmab serum concentrations were monitored throughout the study. One month following the 7^{th} (final) dose, all animals were humanely euthanized. A complete necropsy was performed and a pathologist performed a microscopic examination of a complete set of tissues, emphasizing tissues having potentially meaningful IL-31 signaling. Injection sites and draining lymph nodes of lokivetmab-treated dogs showed a mild microscopic response not unlike that of saline controls, and were otherwise unremarkable. There were no clinical changes associated with dosing. Body weight, food consumption, clinical pathology, and all other pathology end points were similar between groups and were normal. There was no evidence of treatment-induced immunogenicity. Lokivetmab was well tolerated in laboratory dogs when administered subcutaneously at up to 10 mg/kg for seven monthly doses.

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