Detecting and Monitoring Inflammatory Bowel Disease in Dogs (Stool-Immune Test)

Published date: April 4, 2019

Technology description

The Stool-Immune diagnostic test diagnoses inflammatory bowel disease (IBD) in dogs using stool specimens. The accuracy and sensitivity of Stool-Immune test is superior to any diagnostic currently on the market, and can be run using fresh or frozen stool specimens. Use of this test can avoid endoscopic biopsy for an IBD diagnosis, and could also be used to monitor the effectiveness of treatment, since the test provides a quantitative estimate of the intensity of the immune response against commensal bacteria in dogs with IBD.

Detection of IgG (red) and IgA (green) responses against commensal gut bacteria in 3 healthy dogs (top row) and in 3 dogs with IBD (bottom row), using fluorescent antibodies. Dogs with IBD have much more IgG binding to their fecal bacteria than healthy dogs, as evidenced by the red staining bacteria in the bottom panels.

At a Glance

* This Stool Immune diagnostic test uses flow cytometry to quantitate the amount of IgG bound to commensal bacteria in stool specimens from dogs to provide a non-invasive diagnosis of IBD.

* There are currently no diagnostic tests available to unequivocally diagnose IBD in dogs, other than an expensive endoscopic procedure

* Initial evaluation of the Stool Immune test has demonstrated high sensitivity and high specificity for diagnosing IBD in dogs

* The test may be expanded to the diagnosis of IBD in cats as well.

Background

Inflammatory Bowel Disease (IBD) is a common disease in dogs with a variety of proposed causes, and can cause vomiting, diarrhea, and weight loss. Diagnosis of IBD typically requires a combination of laboratory testing and an endoscopic biopsy procedure, which is expensive and requires general anesthesia. Indirect examination methods, including blood work and radiographs, lack sensitivity and specificity to reliably diagnose the disease. Therefore, novel diagnostic methods are needed to rapidly and correctly diagnose IBD.

Technology Overview

A group of investigators in the Center for Immune and Regenerative Medicine at CSU has discovered that dogs with IBD develop an immune response against their own gut bacteria, producing high levels of immunoglobulin G (IgG) bound to the surface of gut bacteria, which in turn triggers intestinal

inflammation. Based on this new understanding of the pathogenesis of IBD in dogs, they have developed a new diagnostic test (Stool-Immune) for IBD that is rapid, sensitive, and non-invasive. The test uses flow cytometry to detect and quantitate the amount of IgG bound to gut bacteria, using small stool samples. The level of IgG binding can be used with high accuracy to distinguish dogs with IBD (high IgG binding) from dogs with healthy GI tracts (low IgG binding).

Advantages

* Use of small stool samples to rapidly diagnose IBD
* Non-invasive testing, avoids need for endoscopic biopsies
* Greater sensitivity and specificity than any indirect tests on market currently

Institution

Colorado State University

Inventors

Sirikul Soontararak
PhD SM18
Clinical Sciences
Steven Dow
Professor
Clinical Sciences

联系我们

叶先生

电 话：021-65679356
手 机：13414935137
邮 箱：yeyingsheng@zf-ym.com