Epigenetic Profile-Based Biomarkers for Irritable Bowel Syndrome

Tech ID: 29937 / UC Case 2018-578-0

SUMMARY

UCLA researchers from the Vatche and Tamar Manoukian Division of Digestive Diseases have discovered an innovative approach to diagnose irritable bowel syndrome. This method uses a set of epigenetic profiles as biomarkers and is highly sensitive compared to conventional diagnostic methodologies.

BACKGROUND

Irritable bowel syndrome (IBS) affects up to 11% of the global population and is largely diagnosed by symptoms criteria. It is associated with significant health and economic burden and decreases quality of life. Surprisingly, there is no consistent genetic expression or biomarker for the accurate diagnosis of IBS. The only commercially available diagnostic antibody test is only about 50% sensitive but highly specific for a subgroup of IBS patients, which limits its widespread use for diagnosis and does not offer much information on treatment planning. Therefore, a highly sensitive, specific and informative diagnostic approach will add great value to clinical care of this multifactorial and heterogeneous disorder.

INNOVATION

Many environmental influences associated with IBS, such as stress and diet, can induce epigenetic changes that alter gene expression without changing the genetic sequence. A blood-based diagnostic test using an epigenetic profile to diagnose IBS was developed to improve upon symptom based clinical diagnostic methods. This test was created based on a comparison analysis of epigenetic profiles between healthy individuals and IBS patients. This test has a 77% sensitivity, 91% specificity and a 91% positive predictive value for the diagnosis of IBS. Additional preliminary analyses demonstrate that an epigenetic profile can also distinguish IBS from inflammatory bowel disease (IBD), which can present with symptoms similar to that in IBS, with 100% accuracy. This diagnostic test can potentially also offer insights into patient responses to drug treatments.

APPLICATIONS

- IBS diagnostic test
- Drug response predictions
- IBS drug development

ADVANTAGES

- High specificity
- High sensitivity
- Simple work flow
- Can distinguish IBS from IBD

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	2021/020721	07/08/2021	2018-578
European Patent Office	Published Application	3802830	04/14/2021	2018-578

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OTHER INFORMATION

KEYWORDS

irritable bowel syndrome; IBS; epigenetic profile; epigenetics; diagnostics

CATEGORIZED AS

- **Medical**
  - Diagnostics
  - Disease: Digestive System

RELATED CASES

2018-578-0

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