UCLA Inventors Identify Specific Molecular Diagnostic Markers For Ulcerative Colitis

Tech ID: 25600

BRIEF DESCRIPTION

UCLA researchers in the Division of Digestive Disease in the Department of Medicine at the David Geffen School of Medicine, led by Drs. Charalabos Pothoulakis and Dimitrios Iliopoulos, have identified several biomolecules that are potential diagnostic markers for ulcerative colitis. These markers can be used singularly or combined, depending on the diagnostic testing need. There is increased flexibility for testing as a positive correlation is related to increased marker levels or the presence of the molecule, depending on the biomarker. Researchers have also identified a marker that can distinguish ulcerative colitis from Crohn's Disease.

ADVANTAGES

- Small biomolecular markers easily identified in tissue samples
- Advanced, FDA-approved diagnostic equipment can be used to measure microRNAs
- Increased levels and presence of biomarkers correlated to disease
- Can be used to distinguish between ulcerative colitis and Crohn's Disease
- Markers include microRNAs 133α, 214, 221-5p, 4454, 223-3p, 23-3p, and 320e, and PTEN and LL-37

FULL DESCRIPTION

Diagnosing the severity of ulcerative colitis (UC) and determining a patient's risk for developing colitis-associated colon cancer has been challenging due to the lack of specific biomarkers. Many biomarkers for inflammatory bowel diseases are not highly specific to just UC, but are also biomarkers for Crohn's Disease and many other gastrointestinal diseases. The identification of a biomarker that is specific to UC will be highly useful to develop of diagnostic and prognostic tests.

RELATED MATERIALS

- Polytarchou, C., et al. MicroRNA214 is associated with progression of ulcerative colitis, and inhibition reduces development of colitis and colitis-associated cancer in mice. Gastroenterology 2015 Oct;149(4):981-992.
- Polytarchou, C., et al. Assessment of Circulating MicroRNAs for the Diagnosis and Disease Activity Evaluation in Patients with Ulcerative Colitis by Using the Nanostring Technology. Inflammatory Bowel Disease 2015 Nov;21(11):2533-2539.
- Im, E., et al. Disruption of Pten speeds onset and increases severity of spontaneous colitis in Il10(-/-) mice. Gastroenterology 2014 Sep;147(3):667-679.
- Cathelicidin as novel inflammatory bowel disease marker and therapy for colitis-associated intestinal fibrosis. PCT/US2013/074034
- MIR-133alpha as a marker and therapeutic target for colitis and inflammatory bowel disease. PCT/US2014/055493

OTHER INFORMATION

References: UCLA Cases 2013-778, 2013-787, 2013-401, 2014-284, 2015-113, 2015-276, 2015-851

Pothoulakis Group: http://gastro.ucla.edu/body.cfm?id=131

Iliopoulos Group: http://gastro.ucla.edu/body.cfm?id=157

Additional technologies available from the Pothoulakis group: http://bit.ly/1WXT3Q6

Additional technologies available from the Iliopoulos group: http://bit.ly/1OPohUU

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OTHER INFORMATION

KEYWORDS

Inflammatory Bowel Disease, IBD, colitis, ulcerative colitis, colon cancer, Crohn's Disease, microRNA, cathelicidin

CATEGORIZED AS

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

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