



MicroRNA Biomarkers and Therapeutic Targets for Colon Cancer and IBD

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SUMMARY

Researchers at the UCLA Geffen School of Medicine have identified a novel set of biomarkers consisting of a microRNA and aftiphilin (AFTPH) as an effective means to distinguish between tissues with colon cancer and normal tissues. Other biomarkers within the set are linked specifically with inflammatory bowel disease.

BACKGROUND

Colon cancer is the third most common cancer in both men and women and the second leading cause of death from cancer in North America, striking approximately 165,000 people and causing nearly 60,000 deaths annually in the United States and Canada. Current treatment options include surgery alone or in combination with chemotherapy. Although early intervention by surgery can cure up to 90% of patients, colon cancer is often diagnosed at an advanced stage, with colonoscopy as one of the most sensitive screening tests available. Therefore there is a need for novel screening biomarkers and alternative therapeutic targets.

INNOVATION

UCLA researchers have identified a novel set of biomarkers consisting of a microRNA and aftiphilin (AFTPH) that could serve as a screening biomarker as well as a therapeutic target to colon cancer. An increase in its expression levels is well correlated with the severity of tumor development in human colon cancer patients. Reducing its expression levels attenuates tumor growth in an *in vivo* mouse model.

Other microRNAs in this set represent novel biomarkers and therapeutic targets for colitis and inflammatory bowel disease.

APPLICATIONS

- ▶ A biomarker for colon cancer screening
- ▶ A biomarker for irritable bowel syndrome screening
- ▶ A pharmaceutical target for colon cancer therapeutics
- ▶ A pharmaceutical target for irritable bowel syndrome therapeutics

ADVANTAGES

- ▶ First report showing this microRNA candidate can predict colon cancer at all stages (including early)
- ▶ Knockdown treatment can reduce tumor growth both *in vitro* and *in vivo*

STATE OF DEVELOPMENT

Researchers have established initial validation of this microRNA biomarker’s utility in human cancer cell lines and animal models.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,233,463	03/19/2019	2013-778

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INVENTORS

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OTHER INFORMATION

KEYWORDS

microRNA, RNA interference, biomarker, colon cancer

CATEGORIZED AS

- ▶ **Biotechnology**
 - ▶ Genomics
 - ▶ Health
- ▶ **Medical**
 - ▶ Disease: Cancer
 - ▶ Screening
 - ▶ Therapeutics

RELATED CASES

2013-778-0

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