



## Novel Biomarker For GI Diseases

Tech ID: 30428 / UC Case 2018-458-0

### SUMMARY

UCLA researchers at the David Geffen School of Medicine have discovered a small antimicrobial peptide elafin to be used as a biomarker for evaluating inflammatory bowel disease activity and the development of intestinal fibrosis.

### BACKGROUND

Inflammatory bowel diseases (IBD) such as ulcerative colitis (UC) and Crohn’s disease (CD) are complex immune-mediated disorders associated with heterogeneous disease presentation. Diagnosis and evaluation of IBD activity commonly rely on biomarkers, including C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), and the more IBD-specific fecal calprotectin (FC), which correlates well with inflammatory colitis activity. However, these biomarkers do not consistently demonstrate accuracy in correlation to certain IBD parameters, such as mucosal disease activity and strictures. Intestinal stricture formation is a debilitating complication of IBD. Currently, there is no effective approach to prevent or reverse the development of intestinal fibrosis. Anti-inflammatory agents have little to no effect on the development of intestinal fibrosis in CD patients, and surgical resection is the last resort for severe cases. Therefore, new diagnostic and therapeutic approaches to IBD-related intestinal fibrosis are being actively sought after.

### INNOVATION

Researchers at UCLA have discovered a small antimicrobial peptide elafin as a candidate IBD biomarker. The mRNA expression of elafin is found to be elevated in ulcerative colitis patients, and the circulating elafin levels correlate with IBD diseases activity and the development of intestinal fibrosis in the presence of intestinal stricture.

### APPLICATIONS

- Diagnosis of IBD disease, including ulcerative colitis, Crohn’s disease
- Evaluation of IBD disease activity, such as intestinal stricture, intestinal fibrosis

### ADVANTAGES

- Superior biomarker for indicating intestinal stricture in CD patients

### STATE OF DEVELOPMENT

- The validity of the biomarker has been clinically tested in UC and CD patients.

### PATENT STATUS

| Country                  | Type                  | Number                      | Dated      | Case     |
|--------------------------|-----------------------|-----------------------------|------------|----------|
| United States Of America | Published Application | <a href="#">20230405078</a> | 12/21/2023 | 2018-458 |
| European Patent Office   | Published Application | 4125988                     | 02/08/2023 | 2018-458 |

### RELATED MATERIALS

- [Wang, J., Ho, W., Shih, D.Q. and Koon, H.W., 2018. Tu1836-Circulating Elafin Levels Accurately Indicates Presences of Strictures in Crohn's Disease Patients. Gastroenterology, 154\(6\), pp.S-1033.](#)

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### INVENTORS

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### OTHER INFORMATION

#### KEYWORDS

biomarker, inflammatory bowel

diseases, ulcerative colitis, Crohn’s

disease, intestinal stricture, intestinal

fibrosis, diagnostic marker

#### CATEGORIZED AS

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

#### RELATED CASES

2018-458-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

► [A Novel Inflammatory Bowel Disease Marker](#)

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