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Fluorescent Organic Nanocrystals for the Early Diagnosis of Esophageal and Colon Cancer

Acronym

FONDIAG

Project partners

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- Bernard DUCOMMUN | France
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Abstract

This project is aimed at developing new specific fluorescent probes, which could dramatically increase the sensitivity of Confocal Endoscopy for the early detection of dysplastic lesions or adenocarcinoma within the gastrointestinal tract. The original strategy that was imagined consists in preparing organic nanocrystals (NC) based on fluorescent dyes, coated by a polysaccharide shell, and grafted with peptides specific for esophagus or colon cancer cells. The bioavailability and toxicity will be tested on various normal and cancerous cells. The possibility to use our nanocrystals for detecting different premalignant and malignant conditions will be investigated on rats bearing models of esophagus or colon adenocarcinomas and/or dysplasia, as well as on fresh human tissues obtained from patients.

