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UEG Week Press Release

Scientists identify promising blood biomarkers for colorectal cancer: is a screening blood test within reach?

(Vienna, October 22, 2014) The search for blood-borne biomarkers that could be used to screen for colorectal cancer (CRC) has uncovered two promising candidates that may one day lead to the development of a simple blood test. Scientists have been piecing together the molecular events involved in the development of CRC and have identified abnormal DNA methylation patterns and the presence of microRNAs as major players in the carcinogenic process.

Speaking to journalists at the 22\textsuperscript{nd} United European Gastroenterology Week (UEG Week 2014) in Vienna, Austria, Dr Antonio Castells from the Institute of Digestive Diseases Hospital Clinic in Barcelona, Spain, said these were exciting times to be working in CRC biomarker research. “Blood-borne biomarkers are opening up exciting avenues of investigation in colorectal and other cancers,” he said. “We now have a better understanding of the molecular events participating in the development of CRC and these provide valuable targets for both the early detection of CRC and the development of novel treatments.”

CRC screening: why do we need a blood test?
Colorectal cancer is the third most common cancer worldwide and the second leading cause of cancer-related death in the Western world. Several studies have confirmed that CRC screening is both effective and cost-effective in the average-risk population, with the two recommended strategies being stool tests that identify occult blood or exfoliated DNA associated with cancer, and structural examinations such as colonoscopy that detect both cancer and pre-malignant lesions.

“Participation in CRC screening programmes across Europe is worryingly low and there seems little doubt that people are put off by the nature of the current tests,” said Dr Castells. “A simple blood test would encourage more people to come forward for screening, potentially saving thousands of lives every year.”

The search for CRC screening biomarkers
Cancer biomarkers are biological changes that signal the presence of cancer in the body and are usually related to alterations in DNA, RNA or protein expression.\textsuperscript{1} Several protein biomarkers of CRC have already been identified, however, none have been useful for CRC screening.\textsuperscript{1} More recently, researchers investigating tumour-derived DNA in the blood have observed abnormal DNA methylation patterns – specifically, abnormally methylated SEPT9 DNA – in the patients with CRC, suggesting a potential new DNA-based biomarker for screening.\textsuperscript{1}

The second potential screening approach outlined by Dr Castells involves assessing the profile of small, non-coding RNAs, known as microRNAs, which have been shown to be increased in the plasma from patients with CRC.\textsuperscript{2} A recent study conducted by Dr Castells and colleagues found that patients with CRC or advanced adenomas had a significantly different pattern of microRNA expression compared with healthy
individuals, leading the group to conclude that plasma microRNA testing was a promising screening test for CRC that warrants further investigation.²

“Both of these potential new CRC screening approaches have shown promise in preliminary studies and should be explored further in larger cohorts of patients,” he told journalists. “There is no doubt in my mind that having an accurate, blood-based screening method would increase adherence to CRC screening guidelines and reduce the number of patients reluctant to be screened.”

References

Notes to Editors

About UEG Week
UEG Week is the largest and most prestigious gastroenterology meeting in Europe and has developed into a global congress. It attracts over 14,000 participants each year, from more than 120 countries, and numbers are steadily rising. UEG Week provides a forum for basic and clinical scientists from across the globe to present their latest research in digestive and liver diseases, and also features a two-day postgraduate course that brings together top lecturers in their fields for a weekend of interactive learning.

From October 18-22, 2014, UEG will connect everyone to its annual meeting via livestream on www.ueg.eu. State-of-the-art lectures of Europe’s largest GI meeting may be followed online from around the world. Include #UEGWeek in your tweets. UEG Week 24/7 features all recorded sessions from UEG Week and provides convenient and direct access to the complete congress material, including E-posters and abstracts.

About UEG
UEG, or United European Gastroenterology, is a professional non-profit organisation combining all the leading European societies concerned with digestive diseases. Together, its member societies represent over 22,000 specialists, working across medicine, surgery, paediatrics, gastrointestinal oncology and endoscopy. This makes UEG the most comprehensive organisation of its kind in the world, and a unique platform for collaboration and the exchange of knowledge.

To advance standards of gastroenterological care and knowledge across Europe and the world, UEG offers numerous activities and initiatives besides UEG Week, including:

- **UEG Education**, the universal source of knowledge in gastroenterology, providing online and classroom courses, a huge online library and delivering the latest GI news, fostering debate and discussion
- **Training Support**, funding for innovative training and educational programmes, as well as international scientific and professional co-operations
- **UEG Journal**, published bi-monthly, covering translational and clinical studies from all areas of gastroenterology
- **EU Affairs**, promoting research, prevention, early diagnosis and treatment of digestive diseases, and helping develop an effective health policy for Europe

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