

VOLGACORE: Volatile Biomarkers for Early Detection and Characterization of Gastric and Colorectal Neoplasms

Project coordinator: Haick Hossam, Technion – Israel Institute of Technology, Israel

Partners countries: Israel, Sweden, Germany, Lithuania, Latvia

Project description:

Gastrointestinal cancers, particularly gastric cancer (GC) and colorectal (CRC) cancer, remain an important global healthcare issue. There is currently no adequate non-invasive screening marker available for GC, and there is substantial room for improvement regarding currently available screening markers for CRC.

VOLGACORE aims to develop a novel, non-invasive and easy-to-use device to enable the earliest possible detection of gastric and colorectal cancers using volatile biomarkers present in exhaled breath. This device will be based on an artificial electronic nose, which makes use of cross-selective and sensitive sensor arrays trained to detect cancer biomarkers. Specifically, the project is designed to: (i) develop arrays of nanomaterial-based sensors for use in an electronic nose; (ii) test the feasibility of the developed devices for sensing volatile biomarkers of gastric and colorectal cancers; (iii) distinguish the targeted biomarkers from environmental clutter and correlate the cancer metabolite signature with genetic aberrations in the related pathways; and (iv) perform clinical related studies to assess cancer conditions in tissue and actual patients in the presence of confounding, real-world signals. The proposed approach would allow monitoring of disease outside specialist settings and barely any expertise would be required. Additionally, the proposed approach is simple and inexpensive enough to manufacture large numbers of disposable units.



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partner countries:



Israel



Germany



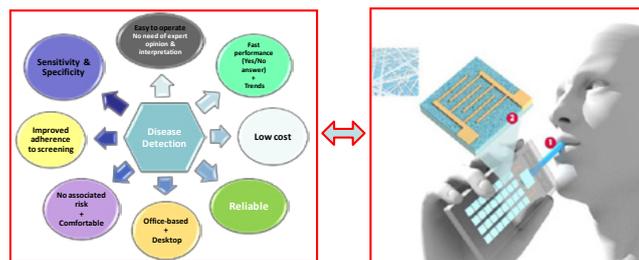
Latvia



Lithuania



Sweden



Highly idealized illustration of the main features of the VOLGACORE concept and the diagnosis procedure for gastric and colorectal cancers

For Further information on EuroNanoMed II: www.euronanomed.net

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