





JOINT TRANSNATIONAL CALL 2016:

"Minimally and non-invasive methods for early detection and/or progression of cancer"

PARTNER REQUEST/COLLABORATION OFFER

If you would like to have your profile published on the TRANSCAN-2 website, "Looking for a research partner" webpage, please fill out this form and send it to 

If you have any questions about this form, please do not hesitate to contact us at 

Note: Fields marked with a * are mandatory

Contact Information	
First name *	GEORGE
Last name *	ZOGRAFOS
Position *	PROF OF SURGERY
Telephone number	2132088569
E-mail address*	labsures@med.uoa.gr , akataki@med.uoa.gr
Website address	www.apropsurgery.gr
Institution/Organisation *	University of Athens, Greece
Department*	1 st Department of Propaedeutic Surgery
Street	Vas. Sofias 114
Postal Code / City *	11527
Country *	GREECE

*** I agree with the publication of my contact data and of this form on the TRANSCAN-2 Website:**

YES



SEARCH FOR A COLLABORATOR

IF YOU ARE LOOKING FOR A PARTNER IN YOUR SUGGESTED PROPOSAL, PLEASE SPECIFY ALSO THE NEEDED EXPERTISE

Project proposal

Project title (draft): Targeting exosomes as a complementary tool to mammographic screening for the early detection of breast cancer

Short description of the project in preparation and of the consortium; description of the areas of expertise needed (Max. 2000 words):

Women who present an abnormal screening mammogram that cannot be resolved by further imaging analysis using magnification views, spot compression views, targeted ultrasonography, are usually subject to biopsy in order to differentiate suspicious lesions. Percutaneous imaging-guided breast biopsy as the minimally invasive Breast Lesion Excision System (BLES) or the vacuum-assisted breast biopsy (VABB) technology is widely applied to evaluate these non-palpable breast lesions. But in areas where such devices are not available open surgery is usually applied. Fortunately, only 1 in 12 breast lumps is cancerous, and 1 in 5 cases of micro-calcification are related to cancer, so most women get good news after a breast biopsy, still there are side effects related to those negative resulted biopsy procedures including increased cost for the national health system and increased surgical risk and anxiety levels for the patients.

It would, therefore, be of great value to investigate whether the promising technology of minimally invasive liquid biopsy by means of detection and characterisation of exosomes can be adopted into routine clinical practice as a complementary tool to stratify those high risk lesions requiring a biopsy after an abnormal screening mammography and ultrasonography.

Exosomes are 30-100nm cell-derived vesicles, stable under varying conditions which are present in numerous biological fluids including serum, breast milk, saliva and bronchial lavage fluid. Tumour-derived exosomes can alter the molecular profile of their microenvironment and help to establish a metastatic niche to aid tumour growth and metastasis. They have attracted interest as potential biomarkers of several diseases including cancer as it has been shown that they are actively released by cancerous cells. Recently the methodology required for their isolation, quantification and characterization has been simplified, making them an attractive molecular biomarker for liquid biopsy. Still, further studies are needed in order to explore and validate an optimal set of markers that could provide the best diagnostic performance

Exosomes will be isolated using commercial available kits according to the methodology proposed by the manufacture and aliquoted. Minimum 1ml of serum will be used as a starting material. In order to be analysable by flow cytometry enriched exosome samples will be bound to beads coated with an exosome specific antibody (CD9). In order to achieve a percentile quantitation of the exosomes present in each sample by means of flow cytometry bead bound exosomes will be then stained for flow cytometry analysis with the CD63-PE or CD81-FITC. Prior to analysis removal of unincorporated dye from labelled exosome preparations will be removed. The bead-bound exosomes will be used for the expression of other proteins playing important roles in the early stage of cancer development (caveolin-1, CXCR4, her-2).

We seek for partners interesting in the above mentioned project. Within the Department there



is a Breast Cancer Unit that can provide about 250-350 samples per year. There are frozen samples available as well. There is an experimental lab in which the analysis of samples can take place as it is equipped to perform cell culture, molecular biology, immunoistochemistry and flow cytometry.



OFFER FOR COLLABORATION

IF YOU PROPOSE YOURSELF AS A PARTNER IN A CONSORTIUM, PLEASE DETAIL YOUR EXPERTISE

Short description of the areas of interest and expertise (Max. 2000 words):