

April 2016

The FASEB Journal vol. 30 no. 1 Supplement 696.5

## **A New Composite Biomarker for Cervical Cancer Diagnosis**

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### **Abstract**

In 2004, at the FASEB meeting, we introduced our new proprietary, biomarker-based MarkPap® technology for detection of abnormal cells on cervical specimens.

At subsequent meetings, we followed with reports for further developments of this platform technology, e.g., semi automated processing, diagnosis at distance with digital (TelePap) and mobile (Mobile Pap) transmission of microscopic images from POC to medical centers. Empowering the methodology with IT technology (telecytopathology) it became infrastructure-independent and a possibility for self-specimen collection (MarkPap Self) opened a prospective for global cervical cancer screening.

On the most recent FASEB meetings we presented our results from building IT Telehealth Center for Telecytopathology with proprietary communication network to a global networking system enabling automatic exchange of secure digital image (high resolution, still, metadata) files between POCs and medical centers for the purpose of global cervical cancer screening.

This time, we are presenting a composite, meaningful biomarker MEDYKO, an acronym, composed of ME - pre-malignant changes (cervical acid phosphatase); DY-dysplasia, dyskaryosis (malignancy); KO – koilocytes, HPV disease (poor prognosis). This composition of biomarkers provides instant visual information of the metabolic status of cell undergoing transformation, morphological status of the nucleus indicating DNA malignant alteration, and koilocytes indicating poor prognosis because of the chronic HPV disease. All three parameters were present in high percent of cases of advanced cervical cancer and hierarchically less expressed in HSIL, LSIL and ASCUS.

These results warrant further work on multiple biomarkers related to malignant disorders, which instant recognition on Pap smears could improve the clinical value of such new Pap test and return it to prior status of the "best anticancer screening test available".