A Tool for Integration of Cytology, HPV Screening and Telecytopathology

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Recently the International Agency for Research on Cancer (IARC) has declared its priorities for 2008. Under the title “2008 Cancer Challenges” the Agency stated that the first general challenge is to prevent those cancers that can be prevented. As a specific priority, IARC calls to develop concerted action against cancer of the cervix. Obviously, the aim is directed to collecting the tools for cervical cancer prevention/HPV vaccination and cervical cancer control (different technologies recommended for cervical cancer screening) into a unique program and, if possible, to replace the outdated Manual for Managers for planning and implementing cervical cancer programs of 2002, and to recommend new guidelines affordable for both developed and developing countries.

We will add our contribution to this effort by introducing a biomarker-based, proprietary MarkPap® cytological screening that can detect abnormal cervical cells caused by malignant transformation and/or HPV disease. We hope that such technology, which is low-cost fast and accurate and upgraded with digital imaging (telecytopathology) could become a unique cervical cancer screening tool. This abstract is a continuation of our prior posters at BIO Innovative Corridor in 2006 and 2007. It will present a prototype of a new filter for color calibration that will integrate protocols in cytology/ pathology, digital imaging and on-line communication that, we hope, will become color calibration standard. Digital color standardization of cytological images is the crucial, but steel unmet, need for better utilization of telemedicine in pathology and cytopathology.

The MarkPap® technology presents opportunities for multiple devices which may have substantial commercial effect on the huge market with 1.7 billion women at risk worldwide and estimated cost of 15-20 billion dollars by 2020.

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MarkPap Digital Concept

MarkPap Digital is BioSciCon's new product in development. It is intended to become a medical device integrating MarkPap biomarker-based cytology, digital imaging and IT web-based communication protocol for application of telecytopathology for mass cervical cancer screening in developing countries where the infrastructure for Pap test is undeveloped. MarkPap Digital, when fully developed and approved, will provide an opportunity for a low-trained laboratory technician or a nurse to process the gynecological specimens with MarkPap Kit in a small remote laboratory or doctor's office, to look on the slide under the microscope searching for red, biomarker positive cells, to capture them with a digital camera mounted on the microscope, and to transmit images of the microscopic field via the Internet to the laboratories with qualified reviewers for evaluation. BioSciCon's MarkPap Digital Team is currently working on the color standardization of cytological images that is very important, but still unmet need for better utilization of telemedicine in pathology and cytopathology. The presentation focuses on the color calibration.