**Early Diagnosis of Cervical Cancer:**

**Discovery of Proteome Content of Cervicovaginal Fluid by LC/MS-MS**

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**Abstract**

Cervical cancer is preventable and treatable by early diagnosis. In current practice, cervical cancer screening worldwide is done with the Pap-smear test that is simple and non-invasive, but at the same time, an error-prone method. It has a high rate of false-negatives since been evaluated manually and it inherently has low sensitivity. Such drawbacks result in misleadings in the early stages of cancer development which causes neoplasias as the precancerous stage to further progress.

HPV test is seen as another major screening method of cervical cancer, however, the current necessity from the diagnostic tests is a "number needed to treat"; because of the high clearance rate of HPV infection. Likewise, HPV's DNA or oncoproteins may be misleading because of the high clearance rate of HPV infections. In contrast, the protein composition of cervicovaginal fluid provides an insight into the biochemical pathways involved in tissue alterations and tumor development.

Owing to the favor that cervicovaginal fluid is suitable for using clinical purposes as contentful body fluid, it is in the focus of targets of diagnosis approaches. To unlock the cervicovaginal fluid content, proteomics studies have been performed during the last 13 years. In this direction, we will describe the method that we developed to obtain maximum protein context from the cervicovaginal fluid of 1 patient sample and our nanoscale proteomic analysis as a preliminary study.

The studies that will be dealt with in this review, have been conducted to detect protein expression differences between different pathological and health conditions using a variety of techniques for proteomic characterization of CVF. Also, the result of a proteomics analysis done by the author will be shown in the conclusion.

**Keywords:** Cervical cancer, early diagnosis, cervicovaginal fluid, biochemistry, protein biomarkers.

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