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Development of female vaginal fluid collection device for the endometrial cancer preliminary study

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Endometrial cancer is a cancer that arises from the inside lining of the uterus. Annually, endometrial cancer results in roughly 142,000 women cases and 42,000 deaths around the globe. Unlike other human malignancies that require biopsies for accurate diagnosis, female genital cancer can be diagnosed via the analysis of the secretion from the genital discharge. The secretion accumulates at the intersection between the cervix and vagina, called vaginal hole, and then passes to the outside. Although commercial collection devices are available in obtaining the secretion, they bring discomfort or inconvenience to patients during the collection. Here, we attempt to develop a sampling collection device with the advantageous characteristics of rapidly collecting secretion specimens and efficiently capturing physiological cycles- or diseases-related molecules without cell or tissue debris. We believe that our device can be a helpful tool to screen/judge uterus-related diseases and enhance the reliability of biochemical analysis. In this research, we specifically investigate the presence of interleukin 6 (IL-6), proteinase 3 (PRTN-3), and vascular endothelial growth factor (VEGF) in human samples obtained by our collection device through the enzyme-linked immunosorbent assay (ELISA) technology. This study can provide a different insight into the molecular screening for endometrial lesions and better understand scientific information of angiogenesis in the normal and abnormal endometrium.

Biography

Jhih-Yan Cheng is currently a Master's student of the Department of Chemical Engineering from National Tsing Hua University. Her research focuses on the development of vaginal fluid collection device.

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