

Abstract Submitted  
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**Electrical Monitoring Cytotoxic Effect of Cigarette Smoke Condensate on Transendothelial Invasion of Ovarian Cancer Cells<sup>1</sup>** DANIEL OPP, CHUN-MIN LO, University of South Florida — We investigated the effects of cigarette smoke condensate (CSC) on barrier function and cellular migration of human umbilical vein endothelial cells (HUVEC), and on the invasive activities of ovarian carcinoma cells through HUVEC monolayers as well. Central to this work was the use of electric cell-substrate impedance sensing (ECIS), a cell-based biosensor that monitors motility and other morphology changes of cells adherent on small gold electrodes. Upon addition of different concentrations of CSC, the junctional resistance and the wound healing rate of the HUVEC layers decrease as CSC concentration increases from 0.01 to 0.25 mg/ml, whereas the average cell-substrate separation increases with CSC concentration. Following the addition of OVCA429 ovarian cancer cells to HUVEC layers with the presence of different CSC concentrations, dose-dependent changes of the transcellular resistance drop were observed. Our results suggest that CSC is detrimental to normal endothelial cell function in maintaining vascular integrity. In addition, the chemicals present in CSC may increase transendothelial invasion of ovarian cancer cells.

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