Researchers at the University of South Florida have developed a novel identification and screening method to detect the presence and recurrence of ovarian cancer using bioactive lysophospholipids as biomarkers.

Ovarian cancer causes an estimated 14,000 deaths in the United States each year, ranking fifth in cancer deaths among women according to the American Cancer Society. These high mortality rates are often contributed to limited early detection methods. Currently, there is no effective early detection method for ovarian cancer, with common detection techniques including ultrasound, patient examination and assays of the cancer antigen 125. However, this antigen only provides a 50% chance of detection amongst stage one ovarian cancer. This highlights the need for a more efficient biomarker to be identified to improve early detection methods.

USF researchers have used multiple subspecies of a bioactive lysophospholipid including lysophosphatidic acid, lysophosphatidylinositol, lysophosphatidylcholine, and lysosphingolipid sphinosine-1-phosphate to detect ovarian cancer cells in an obtained sample. The presence of elevated levels of at least one of the aforementioned lysophospholipids is indicative of ovarian cancer. These bioactive subspecies may be used alone or together to increase the specificity and sensitivity of the assay used for testing. Using this novel screening method, USF researchers were able to diagnose cancer in preoperative patients at multiple stages of ovarian cancer. The technique is also useful postoperatively to detect cancer reoccurrences.