Approximately 21,290 women will be diagnosed with ovarian cancer this year, and about 14,180 of them will die. Ovarian cancer involves the growth of malignant ovarian cells. These cells grow at such an abnormal rate, that they form tumors. Currently, there is no treatment for ovarian cancer.

Peptides have been rapidly growing as a viable treatment for cancer cells for the early part of the 21st century. A peptide (J18) is known to bind to ovarian cancer cells, and preliminary data shows that this peptide is cytotoxic. This means that J18 may be a potential chemotherapeutic drug for ovarian cancer. However, in order to use J18 as a drug, the toxicity and the mechanism behind it must be further elucidated.

In this research study, the cytotoxicity of peptide J18 will be tested against ovarian cancer cells. This will initially be done by a 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay, which measures the cell viability after incubation with peptide J18. Both the optimal peptide concentration and incubation time with cells will be determined. Next, the mechanism of cytotoxicity will be evaluated using a caspase assay, which measures the levels of programmed cell death (apoptosis) in the cells. If the J18 peptide kills the cells via apoptosis, it can potentially become a new drug used to treat ovarian cancer.