# Novel Agents for the Treatment and Diagnosis of Breast and Ovarian Cancer

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## Technology description

## Summary

Breast cancer is the most common cancer in American women after skin cancer (~260,000 new cases diagnosed per year), and ovarian cancer is the leading gynecological cancer (~20,000 new cases per year) in the United States. A large proportion of breast and ovarian tumors express a molecule called cdr2, which can be recognized by the immune system in patients who have naturally occurring tumor immunity. Therefore, it is foreseeable that cdr2 is a likely target for therapeutic agents, including those treatments that would activate the immune system to attack and kill the cdr2-bearing cancer cells. In addition, reagents that recognize cdr2 could be useful for the diagnosis of cdr2-expressing tumors at an early stage of the cancer. Our investigators have identified which parts of cdr2 that stimulate the immune system and have generated cdr2-based peptides that are capable of identifying human T-cells specific to cdr2-expressing cells. From this unique class of T-cells, our scientists have cloned genes coding for the T-cell receptor, which binds to cdr2. The transfer of these T-receptor genes into non-specific T-cells turns them into efficient killers of cdr2-expressing tumor cells, thus providing a potentially effective therapeutic strategy.

## Institution

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