Summary:
This invention is aimed at delaying the tumor growth in breast and ovarian cancers by increasing BRCA1 protein expression.

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Applications:
This invention is aimed at delaying tumor growth in breast and ovarian cancers by increasing BRCA1 protein expression. BRCA1 has also been implicated in prostate and pancreatic cancer, so these agents could also have an effect on these cancers, too.

Overview:
Currently, breast cancer is treated by surgery, radiation therapy, chemotherapy, targeted therapy, and hormonal therapy.

Hormonal therapy is an option for anyone with hormone receptor positive breast cancer. About 60% of breast cancers are hormone receptor positive. However, there are several side effects with hormonal therapy, including uterine cancer and weakening of the bones.

Current targeted therapies only work for HER2 positive breast cancers. However, only 15 to 20% of women with breast cancer have HER2-positive tumors.

This invention is a selection of agents that target the tumor suppressor gene, BRCA1. BRCA1 is responsible for many breast and ovarian cancers. Increasing BRCA1 protein expression will prevent or delay the onset of breast or ovarian tumors. BRCA1 is mutated in 5-10% of all breast cancers. However, these agents also target the 90% of sporadic breast cancers that have a normal BRCA1 gene whose protein expression is decreased. The prevention agents can be administered through any medically acceptable mode in either a localized or systemic approach.

How it works:
By targeting the BRCA1 protein expressed, these prevention agents will reach about 90% of breast cancers where BRCA1 is mutated or ‘turned off.’ Furthermore, the agents can be administered via any medically acceptable mode. Localized administration is possible in addition to a more systematic approach. BRCA1-based treatment option has less severe side effects than traditional breast cancer treatments.

Patents:
US 2012/0259005; CA 2705812; EP 2214664

Additional Web Content:
Contact the inventor, Roy Jensen, Jeffrey Aube, Gerald Lushington, Lisa Harlan-Williams, Frank Schoenen.