Therapy of ERalpha Negative Breast Tumors With Dietary Agents

**Title**: Therapy of ERalpha Negative Breast Tumors with Dietary Agents

**Invention**: This invention uses a naturally occurring dietary agents to induce tumor suppression gene expression.

**Background**: Nearly 5-15% of all breast-cancer cases are due to a hereditary mutation in BRCA1 or BRCA2 genes. The BRCA1 gene is a human tumor suppression gene that repairs DNA but upon mutation is less effective at repair. Silencing of the Breast Cancer 1, early-onset gene (BRCA1) contributes to increased risk of tumors. The remaining roughly 85% of breast cancer cases are considered sporadic tumors, without an inherited genetic basis. Instead of a BRCA1 or BRCA2 mutation, these tumors tend to be triple-negative, meaning they lack three key hormone receptors including the receptor for estrogen (ERalpha). While ERalpha negative tumors do not have a genetic difference in BRCA1, they do lack BRCA1 expression, which closely resembles hereditary breast cancer cases.

**Application**:
- Breast-cancer treatment and prevention

**Advantages**:
- Allows targeted endocrine therapy instead of systemic chemotherapy
- Naturally occurring dietary agents present a less hazardous treatment
- Wide applications of epigenetic expression modification

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