



Reversal of Resistance to Anti-Microtubule Drugs in Human Breast Cancer (*Dr. William Hait, 06-56 CINJ*) *Oncology/Drug Target*

Background

Anti-microtubule agents are among the most active drugs in the treatment of breast cancer. They function by inhibiting microtubule dynamics. Resistance to these agents is complex and includes non-specific, as well as, specific mechanisms of drug resistance. General, non-specific mechanisms include those mediated by the over-expression of drug efflux pumps, whereas mechanisms specific to anti-microtubule agents include alterations in tubulin through mutation, differential expression of tubulin isotypes, post-translational tubulin modifications, and altered expression of microtubule regulatory proteins. The present technology relates to a method to overcome resistance to anti-microtubule agents by targeting microtubule regulatory proteins.

Description of the Technology

UMDNJ/CINJ researchers have recently shown that cell-cycle kinetics constitute a specific mechanism of resistance to anti-microtubule drugs. Since anti-microtubule drugs produce their deleterious effects predominantly during M phase (the phase in which microtubules display the greatest dynamicity), altering the expression of a protein in favor of G2/M progression sensitizes breast cancer cells to anti-microtubule agents. The present technology provides preliminary methodology with supporting data for reversal of resistance to anti-microtubule agents providing a therapeutic advantage to a subset of cancers that are often aggressive and resistant to conventional therapies.

Applications

For the treatment of cancers resistant to conventional therapies.

Patent Status

United State provisional patent application filed

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