Cisplatin Resistant Ovarian Cancer Tumor Growth Is Slowed When Treated With DHS. The Combination Of DHS And Cisplatin Proves Even More Effective, Highlighting The Re-sensitization Of The Cancer Cells To Cisplatin.

GW researchers developed DHS (4,4’-trans-dihydroxystilbene) as a new cytotoxic anticancer drug for use alone or in combination with other chemotherapies. Drug toxicity and drug resistance limit the ability of many cytotoxic cancer drugs to effectively treat cancer, a problem which is overcome by DHS. The cancer killing efficacy of DHS is 10-times better than its parent compound, resveratrol, which is well known as the anti-oxidant abundant in red wine and blueberries. Resveratrol has cleared phase I human trials and is a commonly used dietary supplement.

DHS represses And-1 function, thereby preventing DNA replication. And-1 is a DNA replication factor highly expressed in cancer cells and with little to no expression in normal cells. DHS also down regulates RRM1 and RRM2, two subunits of RNR (ribonucleotide reductase). RNR is critical for synthesis of the building blocks of DNA.

Treatment with DHS inhibited proliferation in vitro of colon cancer, oral cancer, pancreatic cancer, and ovarian cancer cells. Treatment with DHS alone suppressed tumor growth in xenograft tumor mouse models. Combination treatment with DHS and standard chemotherapeutics successfully re-sensitized drug-resistant xenografts to first-line cancer drugs.

**Applications:** Cancer therapy

**Advantages:**
- Can treat a large array of cancer types
- DHS has minimal effects on normal cells
- DHS re-sensitizes drug-resistant cancer cells

**Inventors**

Wenge Zhu

Chi-Wei Chen
Yongming Li
Zhiyong Han