

# A New Cancer Treatment Personalization Method, Combining Mathematical Models with Xenografted Biopsies, and its Preclinical and Clinical Validation

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## Abstract

Personalization of cancer treatment is a challenging task. Here we present a new method for treatment personalization based on concepts and mathematical models developed over the last three decades. The new method forms a unique combination of *in-silico*, *in-vitro* and *in-vivo* models for a personalized treatment of Mesenchymal Chondrosarcoma (MCS) patients, using co-administration of chemotherapy and angiogenesis inhibitors. Docetaxel/Bevacizumab regimen proposed here resulted in temporary tumor stabilization of the MCS patient, substantial recovery of blood counts and in almost a year of good quality of life. The results are expanded to a general hypothesis that associates between patient angiogenesis state and the optimal inter-dosing interval of a cytotoxic drug. Now the experimentalists may test this hypothesis in animals and, if validated, bring it to the clinic.

## Reference:

Gorelik B., Ziv I., Shohat R., Wick M., Webb C., Hankins D., Sidransky D., Agur Z. Efficacy of once weekly docetaxel combined with bevacizumab for patients with intense angiogenesis: validation of a new theranostic method in mesenchymal chondrosarcoma xenografts. *Cancer Research*, 68: (21) November, 1 2008, PP. 9033-40.