1016-92-113   **Howard A Levine*** (`halevine@iastate.edu`). *A mathematical model for the regulation of tumor dormancy based on enzyme kinetics.*

In this paper we present a two compartment model for tumor dormancy based on an idea of Zetter to wit: The vascularization of a secondary (daughter) tumor can be suppressed by inhibitor originating from a larger primary (mother) tumor. We apply this idea at the avascular level to develop a model for the remote suppression of secondary avascular tumors via the secretion of primary avascular tumor inhibitors. The model gives good agreement with the observations. We attempt to provides reasonable biochemical/cell biological model for this phenomenon. We show that when the tumors are sufficiently remote, the primary tumor will not influence the secondary tumor while, if they are too close together, the primary tumor can effectively prevent the growth of the secondary tumor, even after it is removed. It should be possible to use the model as the basis for a testable hypothesis which could be checked in a controlled in vitro experiment. (Received February 07, 2006)

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