CANCER THERAPY

BACKGROUND

[0001] Cancer is a leading cause of death worldwide, accounting for 7.6 million deaths (around 13% of all deaths) in 2008. Lung, stomach, liver, colon, and breast cancer cause the most cancer deaths each year, according to the World Health Organization. Cancer is the second leading cause of death in the United States, exceeded only by heart disease. In 2008, more than 565,000 people died of cancer, and more than 1.48 million people had a diagnosis of cancer, according to the United States Cancer Statistics: 1999–2008 Incidence and Mortality Web-based Report. The cost of cancer extends beyond the number of lives lost and new diagnoses each year. The financial costs of cancer also are overwhelming. According to the National Institutes of Health, cancer cost the United States an estimated $263.8 billion in medical costs and lost productivity in 2010. (See, www.cdc.gov/chronicdisease/resources/publications/AAG/dcpc.htm.)

SUMMARY

[0002] The present invention relates in general to methods and compositions for the treatment of cancer, in some embodiments for the treatment of cancers of epithelial cell origin. Improved treatment methods and regimens described herein are the product of a novel and comprehensive approach to the development of individualized treatments for cancer. The approach to treatment recognizes that cancer growth and metastasis depends on unchecked cellular processes, in particular angiogenesis, and simultaneously the activation of multiple metabolic and signaling pathways in the patient. Pathways that in a normal individual would suppress, or at least not support, cancer growth are inactive, blocked or attenuated in a cancer patient; likewise, pathways that are cancer-supportive, which are held in check or counterbalanced in a normal individual, are amplified in a cancer patient. In some embodiments, an object of the therapeutic approach of the present invention is to inhibit or attenuate angiogenesis as well as to rebalance as many of the metabolic, intercellular signaling, and intracellular signaling pathways that are detected or suspected to be contributing to the survival or growth of the cancer.

[0003] In some particular embodiments, objects of provided treatment protocols described herein are to achieve one or more of the following:

- blocking, interrupting, or attenuating tumor angiogenesis (i.e., the formation and development of the vasculature that tumors need in order to thrive and progress) or pathways that support angiogenesis, including disruption of signaling inducing vasculogenic mimicry (e.g. tumor stem cell activity);