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(54) Title: METHODS AND COMPOSITIONS FOR MODULATING CELL PROLIFERATION AND CELL DEATH

(57) Abstract: Methods and compositions for modulating the FGF effect on the sensitivity of malignant and normal cells to anti-cancer agents are provided. In particular, methods and compositions for inhibiting FGF-induced resistance to a broad spectrum of anticancer agents in solid and soft-tissue tumors, metastatic lesions, leukemia and lymphoma are provided. Preferably, the compositions include at least one FGF inhibitor in combination with a cytotoxic agents, e.g., antimicrotubule agents, topoisomerase I inhibitors, topoisomerase II inhibitors, antimetabolites, mitotic inhibitors, alkylating agents, intercalating agents, agents capable of interfering with a signal transduction pathway (e.g., g., a protein kinase C inhibitor, e.g., an anti-hormone, e.g., an antibody against growth factor receptors), an agent that promote apoptosis and/or necrosis, an interferon, an interleukin, a tumor necrosis factor, and radiation. In other embodiments, methods and composition for protecting a cell in a subject, from one or more of killing, inhibition of growth or division or other damage caused, e.g., by a cytotoxic agent, are provided. Preferably, the method includes: administering, to the subject, an effective amount of at least one FGF agonist, thereby treating the cell, e.g., protecting or reducing the damage to the dividing cell from said cytotoxic agent.