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(54) Title: WILD-TYPE RAS AS A CANCER THERAPEUTIC AGENT

(57) Abstract: Methods for inhibiting proliferation of a cell, particularly a cancer cell are provided. The method comprises increasing intracellular levels of one or more wild-type ras proteins in the cell. In one aspect, the method comprises introducing and expressing a nucleic molecule that encodes a wild-type ras protein in the cell. In another aspect, intracellular levels of one more ras proteins are increased by introducing one or more wild-type ras proteins into the cell. The present invention also relates to the therapeutic use of wild-type ras proteins or nucleic acids that encode one or more wild-type ras proteins in the treatment of tumors or cancer, or prophylactically to prevent formation of tumors or cancer. Methods of characterizing or evaluating cancer in a humans or other mammals are provided. In one embodiment, the method comprises assaying for a loss of function mutation in one or more endogenous ras alleles in the genome of tumor cells obtained from the subject. In another embodiment, the method comprises assaying for a loss of function mutation in one or more endogenous ras alleles and an activating mutation in one or more ras alleles in tumor cells obtained from the subject.