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(54) Title: METHODS AND COMPOSITIONS FOR INTERFERON THERAPY

(57) Abstract: Methods and pharmaceutical compositions for administering protein or gene therapy to tissues or organs having an epithelial cell layer are provided. A protein or nucleic acid encoding the protein is administered to the target tissue or organ in combination with treatment with a delivery enhancing agent which increases the delivery of the interferon or nucleic acid to the cells of the target tissues or organs. The methods and combinations are particularly useful in the treatment of cancers and other conditions responsive to interferon therapy. An exemplary method comprises the transurethral intravesical administration to the bladder of a therapeutically effective amount of a pharmaceutical composition comprising an alpha-interferon or a gene delivery system encoding the interferon and SYN3 or a SYN3 homolog or analog. In the urinary bladder, as much as a 10 to 1000 fold increased in interferon levels and activity may be observed with the use of a SYN3 formulation as opposed to a PBS formulation of the same interferon protein or interferon gene delivery system.

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