

Looking for a business partner

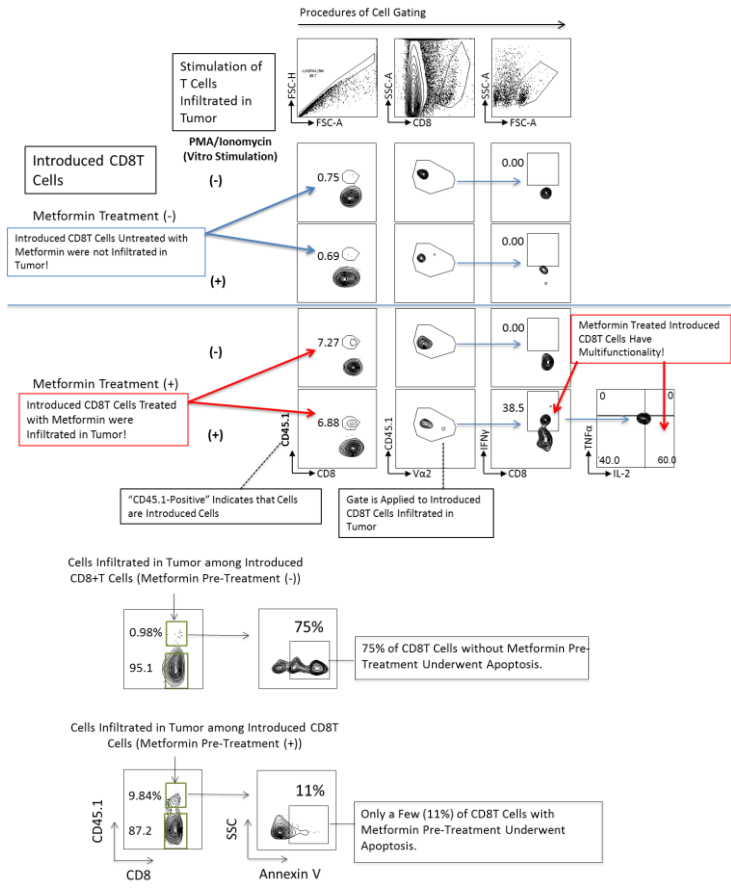
ENHANCING IMMUNE CELL FUNCTIONS

Inventions

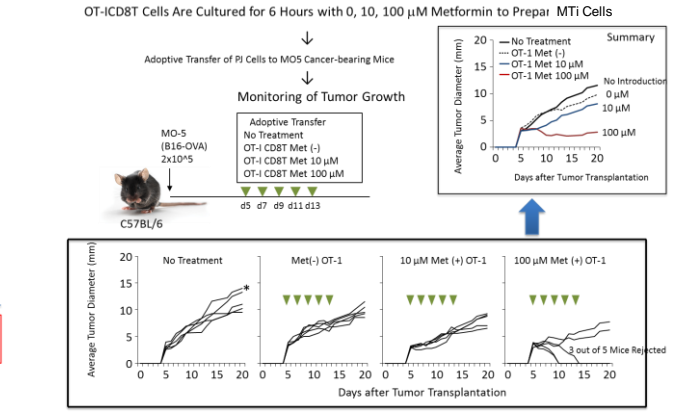
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- METHOD TO ENHANCE IMMUNE CELL FUNCTIONS
- METHODS FOR ASSESSING IMMUNE CELL MULTIFUNCTIONALITY, e.g. IMMUNE FUNCTION INSPECTION METHOD, CANCER PATIENT CATEGORIZATION METHOD, CANCER and TREATMENT EFFICACY PREDICTION METHOD
- AGENT FOR INCREASING INTRACELLULAR CALCIUM ION CONCENTRATION, AGENT FOR INCREASING SELECTIVE FUNCTION OF EFFECTOR MEMORY (EM), EFFECTOR (EFF) IN TUMOR TISSUE, and METHOD FOR MONITORING EFFICACY OF CANCER DRUG
- FUNCTION IMPROVING AGENT FOR IMMUNE EXHAUSTION CD8+T CELLS, CANCER THERAPEUTIC AGENT, and METABOLIC SYNDROME PREVENTIVE or THERAPEUTIC AGENT

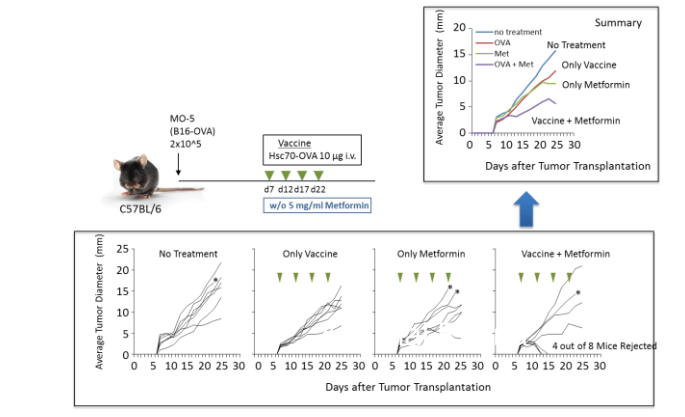
Metformin induces T Cell Infiltration in Tumor



Metformin treated Immune Cells suppress Tumor Growth



Combination Effects of Metformin and Cancer Vaccine



Abstract

Our invention provides the method for enhancing immune cell functions by activating various immune cells ex vivo and provides immune cells with enhanced functions. We also provide the immune-related cell multifunctionality evaluation methods. A biguanide anti-diabetic drug selected from metformin, phenformin, and buformin is capable of enhancing immune cell multifunctionality by increasing CD8+T cells having a high ability to produce IL-2, TNFα, and IFNγ. The multifunctional immune-related cells could be evaluated by comparing immune cells treated with or without a biguanide antidiabetic drug. When the multifunctionality of immune cells treated with the biguanide antidiabetic drug is determined to be significantly increased compared with the control, it can be evaluated that the sensitivity of the immune cells to the therapeutic agent is improved. Therefore, this treatment shows the positive effects on the immune cells and the efficacy of a cancer therapeutic agent.

