AGENT FOR TREATING AND/OR PREVENTING DISEASES ASSOCIATED WITH IMMUNE ABNORMALITIES BY COMBINING BIGUANIDE ANTIDIABETIC DRUG WITH IMMUNOSUPPRESSIVE FACTOR BLOCKING AGENT OR COSTIMULATORY RECEPTOR AGONIST

ABSTRACT

The present invention provides a method for enhancing immune cell function by activating various immune cells ex vivo and provides immune cells with enhanced function. The invention further provides an immune-related cell multifunctionality evaluation method. A biguanide antidiabetic 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 immune-related cell multifunctionality may be evaluated by comparing immune cells treated with a biguanide antidiabetic drug selected from metformin, phenformin, and buformin, with control immune cells untreated with the biguanide antidiabetic drug. When the multifunctionality of immune cells treated with the biguanide antidiabetic drug selected from metformin, phenformin, and buformin 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.