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Polyinosinic-polycytidylic Acid/Inactivated Rabies Virus Vaccine YS-ON-001

National Cancer Institute

Source

National Cancer Institute. *Polyinosinic-polycytidylic Acid/Inactivated Rabies Virus Vaccine YS-ON-001*. NCI Thesaurus. Code C148534.

A cancer vaccine composed of inactivated rabies vaccine (RV-V) and polyinosinic-polycytidylic acid (poly IC; poly I-C), an immunostimulant and Toll-like receptor 3 (TLR3) agonist, with potential immunostimulating and antineoplastic activities. Upon administration of the poly IC/inactivated RV-V YS-ON-001, the RV-V stimulates the immune system in various ways, such as promoting the activation and proliferation of T helper type 1 (Th1) cells, dendritic cells (DCs), B cells and natural killer cells (NKs), promoting macrophage M1 polarization, downregulating regulatory T-cells (Tregs), and inducing the production of anti-tumor cytokines. This re-activates immune responses in the suppressed tumor microenvironment (TME), leading to an induction of cytotoxic T-lymphocyte (CTL)-mediated immune response against the tumor cells, which cause tumor cell apoptosis and a reduction of tumor cell proliferation. Poly IC, a synthetic double-stranded RNA with one strand composed of an inosinic acid polymer and the other strand a cytidylic acid polymer, binds to TLR3 and stimulates the release of cytotoxic cytokines, such as interferon-gamma (IFN γ). This may boost the immune response against the tumor cells.