IDO1 Inhibitor MK-7162

National Cancer Institute

Source

National Cancer Institute. IDO1 Inhibitor MK-7162. NCI Thesaurus. Code C148235.

An orally available inhibitor of indoleamine 2,3-dioxygenase 1 (IDO1), with potential immunomodulating and antineoplastic activities. Upon administration, IDO1 inhibitor MK-7162 specifically targets and binds to IDO1, a cytosolic enzyme responsible for the oxidation of the amino acid tryptophan into the immunosuppressive metabolite kynurenine. By inhibiting IDO1 and decreasing kynurenine in tumor cells, MK-7162 restores and promotes the proliferation and activation of various immune cells, including dendritic cells (DCs), natural killer (NK) cells and T-lymphocytes. This agent may also induce increased interferon (IFN) production, which may lead to a reduction in tumor-associated regulatory T-cells (Tregs). Activation of the immune system, which is suppressed in many cancers, may induce a cytotoxic T-lymphocyte (CTL) response against and inhibit the growth of the IDO1-expressing tumor cells. IDO1, an enzyme overexpressed by multiple tumor cell types, plays an important role in immunosuppression. Tryptophan depletion inhibits T-lymphocyte proliferation and activation, and suppresses the immune system.