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IDO1/TDO2 Inhibitor DN1406131

National Cancer Institute

Source

National Cancer Institute. *IDO1/TDO2 Inhibitor DN1406131*. NCI Thesaurus. Code C162858.

An inhibitor of both the enzymes indoleamine 2,3-dioxygenase 1 (IDO1; IDO-1) and tryptophan 2,3-dioxygenase 2 (TDO2; TDO-2), with potential immunomodulating and antineoplastic activities. Upon administration, IDO1/TDO2 inhibitor DN1406131 targets, binds to and inhibits both IDO1 and TDO2, which catalyze the first and rate-limiting step in the production of the immunosuppressive transcription factor aryl hydrocarbon receptor (AhR) ligand kynurenine (KYN). This inhibits the IDO1/TDO2-KYN-AhR pathway. Abrogation of AhR activation prevents the activation of immune-tolerant dendritic cells (DCs) and regulatory T-cells (Tregs) in the tumor microenvironment (TME). This may restore the immune response against tumor cells in which IDO1 and/or TDO2 are overexpressed. The IDO1/TDO2-KYN-AhR pathway is overexpressed in a variety of tumor cell types, plays a key role in immunosuppression and its expression is correlated with poor prognosis.