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Conditionally Replicative Adenovirus 5/3-delta24

National Cancer Institute

Source

National Cancer Institute. *Conditionally Replicative Adenovirus 5/3-delta24*. NCI Thesaurus. Code C99762.

A replication competent, oncolytic adenovirus serotype 5 (Ad5) with its knob domain of fiber protein substituted by that of the serotype 3 (Ad5/3-delta24), with potential oncolytic activity. Upon administration, oncolytic adenovirus Ad5/3-delta24 binds to specific Ad3 receptors that are highly expressed on certain tumor cells. This results in the replication of oncolytic adenovirus Ad5/3-delta24 in tumor cells and induces tumor cell lysis which may potentially result in the activation of a systemic immune response against tumor-associated antigens. The Ad5/3-delta24 has a 24 base pair deletion in constant region 2 of the E1A gene which allows for selective replication in cells that are defective in the retinoblastoma gene (Rb) or cyclin-dependent kinase inhibitor-2A (CDKN2A or p16INK4a). As most tumor cells are defective in the Rb/p16 pathway, this virus selectively replicates in these cells. The replacement of the Ad5 fiber knob, which mediates viral-cell receptor binding, allows for a Coxsackie-adenovirus receptor (CAR)-independent infection of tumor cells; CAR expression is often deficient on cancer cells.