

[Open Peer Review on Qeios](#)

# Plasmacytoid Dendritic Cell Vaccine

National Cancer Institute

## Source

National Cancer Institute. *Plasmacytoid Dendritic Cell Vaccine*. NCI Thesaurus. Code C103192.

A whole cell vaccine derived from a distinct subset of dendritic cells (DCs) with a plasma cell-like morphology that exhibits immunomodulating activity. Plasmacytoid dendritic cells (pDCs) express a characteristic set of surface markers, such as CD123 (interleukin-3 receptor alpha chain), BDCA-2 (blood dendritic cell antigen 2; CD303) and BDCA-4 (CD304), as well as intracellular toll-like receptors 7 and 9. Upon stimulation, the activated pDCs produce substantial amounts of interferon (IFN) alpha, and to a lesser degree IFN-beta, as well as other cytokines and chemokines, such as tumor necrosis factor alpha and interleukins 1, 6 and 8. In addition, these pDCs, directly or indirectly stimulate T-cells, B-cells and natural killer cells. This may potentially lead to increased immunity against tumor cells.