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Alpha-type-1 Polarized Dendritic Cells

National Cancer Institute

Source

National Cancer Institute. *Alpha-type-1 Polarized Dendritic Cells*. NCI Thesaurus. Code C64846.

A mature polarized dendritic cell with potent immunostimulating activity. Treating dendritic cells (DCs) with interferon-alpha (IFN- α) and polyinosinic:polycytidylic acid (p-I:C) in addition to a cytokine cocktail (tumor necrosis factor alpha/Interleukin-1beta/IFN-gamma) produces mature but not exhausted alpha type-1 polarized DCs (alphaDC1) that are capable of: 1) high responsiveness to other lymphoid chemokines, and 2) producing high level of interleukin-12p70 (IL-12p70). Therefore, alphaDC1 has a much more significant capability of inducing helper T cell (CD4+ T-cell) responses in comparison with the "gold standard" DCs. When pulsed with specific tumor associated antigens (TAAs), alphaDC1 is able to induce a potent cytotoxic T lymphocyte (CTL) response against TAAs; as a result it can be used as a cancer vaccine.