

Global Dendritic Cell Cancer Vaccine Market Outlook 2020

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Abstracts

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Dendritic cell first discovered in the early 19th century by Paul Langerhans and their further study and the role it plays in immune system conducted by M. Steinman in 1973, has only received the most deserved attention as a vaccine molecule, in general and as a cancer therapeutics, in particular in the recent past years. There was a widespread skepticism regarding its potential as a vaccine in the scientific community which only eased out with the further ongoing clinical trials.

However, gone are the gloomy days for the dendritic cells, the sentinels of the immune system, as its market share in cancer market is rising exponentially. Dendritic cell cancer vaccines which started its journey with ex-vivo clinical trials in murine models have now gone on to rephrasing the molecular mechanism of the immune system, enriching our immunological knowledge and empowering our ability to counteract the tumor growth. Dendritic cells have also been successful in generating therapeutic and prophylactic options not just for cancer treatments but also for other ailments, deemed incurable.

Dendritic cells play a critical role in immune modulation, which makes them a perfect target for the clinical studies revolving around T cell induced immune reaction like allergic reaction studies, host v/s graft disease, infection resistance studies and immune-compromised patient studies, besides cancer vaccines development. However, it has been seen that many tumor antigens do not induce T cell mediated immune response which could be due the absence of functional dendritic cells in the tumors. It has been observed that dendritic cells that invade colon and skin cancer cells, sometimes lack CD80 and CD86 epitopes, therefore have limited T-cell stimulatory activity. Besides,

tumors are capable of secreting growth factors like interleukin-10, Tumor Growth Factor, which retards the development and the maturation stages of dendritic cells. This implies that with increased dendritic cells invading the tumor cells the probability of enhanced prognosis is greatly increased.

There are several combinational therapies wherein dendritic cells are administered along with monoclonal antibodies, antibody-drug conjugates and peptide based vaccines to increase the efficacy of the vaccines. This is because of the fact that in the cancer patients, the immune system is already compromised, besides the tumor microenvironment which negates the mechanism of action of immunological cells. The role of conventional therapy like chemotherapy, surgical removal of tumor cells or radiotherapy also needs to be underscored as they help in reducing the bulk of tumorous growth. The cancer based vaccines when administered thereafter, is reported to have increased efficiency.

As dendritic cells are found to have a modulatory effect on almost all the parameters of the immune system, all other types of cancer vaccines are found to be administered in conjugation with dendritic cells cancer vaccine to have a synergistic effect on immune system against tumor growth. With further advancement in immunological studies, dendritic cells cancer vaccine will have a driving effect on cancer therapeutics which will have a lion's share on cancer vaccine market.

“Global Dendritic Cell Cancer Vaccine Market Outlook 2020” Report highlights:

Introduction & Mechanism of Action of Dendritic Cells

New Vaccine Strategies That Exploit Dendritic Cells Biochemistry

Dendritic Cell Cancer Vaccine Market & Clinical Insight

Comparative Insight of Dendritic Cell Vaccines & Other Class of Vaccines

Dendritic Cell Cancer Vaccine Pipeline by Country, Company, Indication & Phase

Dendritic Cell Cancer Vaccine Clinical Pipeline: 58 Vaccines

Majority in Phase I/II & Phase II Clinical Trials: 12 Vaccines

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