

Global Dendritic Cell Cancer Vaccine Market & Clinical Trials Outlook 2023

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Abstracts

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“Global Dendritic Cell Cancer Vaccine Market & Clinical Trials Outlook 2023” report gives comprehensive insight on various clinical and non-clinical advancements in the global dendritic cell cancer vaccine market. In recent years, dendritic cell cancer vaccines have emerged as new growth frontier for the companies involved in the research and development of drugs for the treatment of cancer. As per report findings, currently there are 53 dendritic cell cancer vaccines in clinical pipeline. Most of the dendritic cell cancer vaccines are in preclinical phase followed by phase-II clinical trials.

“Global Dendritic Cell Cancer Vaccine Market & Clinical Trials Outlook 2023”

Highlights:

Global Dendritic Cell Cancer Vaccine Market Overview

Assessment of Dendritic Vaccines with Other Therapeutic Regimens

Global Dendritic Cell Vaccines Clinical Pipeline by Company, Indication & Phase

Marketed Dendritic Cell Vaccines Clinical Insight

Dendritic Cells Mechanizing Immune Response

Future Growth Opportunities

Cancer is the leading cause of death worldwide and with around 18 million to 20 million new cases emerging every year, it takes heavy toll on people life and property. The governments across the globe along with private sectors have invested heavily in cancer therapeutics, which will be on the rising curve given the factors that abnormally increase the concentration of carcinogens in the atmosphere like vehicular emissions, environmental degradation coupled with drastic lifestyle changes like leading a sedentary life, lack of exercise etc.

Meanwhile, the conventional cancer therapeutics has but failed to yield desired result. During chemotherapy or radiation therapy or hormonal treatments which are the working horse of the cancer treatment besides tumor cells, normal surrounding cells are also killed. The necrosis factors associated with the dying normal cells signals inflammatory response to kick in and take the immune system on hyper drive killing tumor cells as well as normal, healthy adjoining cells as a collateral damage. This brings out the biggest irony, that the body instead of fighting off the cancer becomes susceptible to plethora of other life-threatening abnormalities causing high morbidity.

Dendritic cell cancer vaccines have created a niche for themselves in the cancer market, because they enjoy some inherent biochemical properties which could only be envy by their peers. They are the best known antigen presenting cells, as their task is to bind to the antigen peptides with MHC molecules and activate CD4+ T cells or CD8+ T cells to elicit the desired innate and adoptive immunity. Their action with MHC molecule offers dendritic cells, the prerequisite specificity in targeting the tumor associated antigens of various cancer types and its sub-types. This has enabled dendritic cell cancer vaccines to offer a wide domain of therapeutic action.

The recent advancement in in situ dendritic cell production from its progenitor cells, its maturation enabling processes and its delivery techniques has added to their advantage. They are also known to generate memory T cells which could produce a heightened secondary immune response for future encounters with the tumor cells in case of tumor progression. As cancer cells are known to evade immune response by triggering regulatory T cells suppressing the immune system, dendritic cells come to the rescue as it antagonistically acts on immune checkpoint inhibitors like CLAT4 and CD25 mediated immune pathways, thereby breaking the host's immune tolerance.

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.

Even though some technical concerns existed regarding in situ production of dendritic cells due to its low concentration in peripheral tissues, it has been successfully overcome with engineered dendritic cells which could now be produced in large number for mass scale vaccination programs. Simultaneous administration of regulating factors which facilitate dendritic cell survival and immune-modulator function holds the key for increased efficiency of cancer vaccine based on dendritic cell, the superspecialised sentinels of cancer immunotherapy, the title it truly deserves.

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