

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 must 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

Contents

1. DENDRITIC CELLS CANCER VACCINE: THE GENESIS

2. CLASSIFICATION OF DENDRITIC CELLS

3. MECHANISM OF ACTION OF DENDRITIC CELLS

3.1 Antigen Presentation & Induction of Cellular Immune Responses

3.2 Sources of Antigen to Be Loaded Onto Dendritic Cells

3.3 Dendritic Cells Source & Subsets

3.4 Maturation State

3.5 Maturation Stimuli

3.6 Migration

3.7 Route, Dose & Schedule of Dendritic Cells Vaccination

3.8 Clinical Results in Miscellaneous Cancers

3.9 Quality Control

3.10 Immune Monitoring

4. NEW VACCINE STRATEGIES THAT EXPLOIT DENDRITIC CELLS BIOCHEMISTRY

4.1 Provision of CD4 T-Cell Help for CD8 T Cells

4.2 Strategies to Recruit, Mature & Load Dendritic Cells In Situ

4.3 Strategies to Activate NKT Cells

5. DENDRITIC CELL CANCER VACCINE MARKET & CLINICAL INSIGHT

5.1 Some Trends Involving Dendritic Cells Cancer Vaccination

5.2 Dendritic Cell Cancer Vaccine Pipeline Overview

6. A COMPARATIVE INSIGHT OF DENDRITIC CELL VACCINES & ITS PEERS

6.1 Dendritic Cell Cancer Vaccine & Monoclonal Antibodies

6.2 Dendritic Cell Cancer Vaccine & Peptide Based Cancer Vaccine

6.3 Dendritic Cell Cancer Vaccine & Cytokine Based Cancer Vaccine

6.4 Dendritic Cell Cancer Vaccine & Antibody Drug Conjugate Based Cancer Vaccine

7. THE GROWTH FACTORS: WHY THE FIXATION WITH DENDRITIC CELL

CANCER VACCINES?

8. ROAD AHEAD: DENDRITIC CELL CANCER VACCINE IN THE CHALLENGING HORIZON OF CANCER IMMUNOTHERAPY

9. CONCLUSION: DENDRITIC CELL CANCER VACCINE; A SILVER LINING TO THE DARK UNDER-BELLY OF CANCER

10. DENDRITIC CELL CANCER VACCINE CLINICAL PIPELINE BY COUNTRY, COMPANY, INDICATION & PHASE

10.1 Research

10.2 Preclinical

10.3 Clinical

10.4 Phase-I

10.5 Phase-I/II

10.6 Phase-II

10.7 Phase-II/III

10.8 Phase-III

11. MARKETING DENDRITIC CELL CANCER VACCINE: CREAVAX® (RENAL CANCER, SOUTH KOREA)

12. MARKET WITHDRAWAL: PROVENGE BY DENDREON CORPORATION

13. DISCONTINUED & SUSPENDED DENDRITIC CELL CANCER VACCINE IN CLINICAL TRIALS

13.1 Discontinued

13.2 No Development Reported

13.3 Suspended

14. COMPETITIVE LANDSCAPE

14.1 3M Company

14.2 Activartis

14.3 Argos Therapeutics

14.4 Batavia Bioservices

14.5 Bellicum Pharmaceuticals

- 14.6 Creagene
- 14.7 DanDrit Biotech
- 14.8 DCPrime
- 14.9 Dendreon Corporation
- 14.10 Elios Therapeutics
- 14.11 ImmunoCellular Therapeutics
- 14.12 Immunicum
- 14.13 Kiromic
- 14.14 Medigene
- 14.15 Merck
- 14.16 Northwest Biotherapeutics
- 14.17 Glaxo Smith Kline
- 14.18 ImmunoCellular Therapeutics
- 14.19 SOTIO
- 14.20 Tella Incorporation
- 14.21 Theravectys
- 14.22 Vaxil BioTherapeutics

List Of Figures

LIST OF FIGURES

Figure 1-1: Advantages of Dendritic Cell Cancer Vaccine

Figure 2-1: Classification of Dendritic Cells

Figure 3-1: Principle of Dendritic Cell Cancer Immunotherapy

Figure 3-2: The Key Players Intricately Involved in Antigen Presentation & Immune Response Machinery

Figure 3-3: Process of Antigen-loading

Figure 3-4: Major Life Cycle Events of a Dendritic Cell

Figure 3-5: A Diagrammatic Representation of Dendritic Cell Plasticity

Figure 3-6: Action of Dendritic Cells on the Various Cancer Forms

Figure 4-1: The Arsenal in the Inventory of Dendritic Cells

Figure 5-1: Recent Trends in Dendritic Cell Vaccine

Figure 5-2: Dendritic Cell Cancer Vaccine by Phase (%), 2016

Figure 5-3: Dendritic Cell Cancer Vaccine by Phase (Numbers), 2016

Figure 6-1: Working Principle Targeted By Dendritic Cells & Monoclonal Antibodies

Figure 6-2: Working Principle Targeted by Dendritic Cells & Peptide Cancer Vaccines

Figure 6-3: Working Principle Targeted by Dendritic Cells & Cytokine Cancer Vaccine

Figure 6-4: Working Principle Targeted By Dendritic Cells & Antibody-Drug Conjugates Cancer Vaccines

Figure 7-1: Factors Driving Dendritic Cell Cancer Vaccine

Figure 8-1: Challenges for Dendritic Cell Cancer Vaccine

Figure 14-1: Argos Therapeutics- Clinical Pipeline

Figure 14-2: Bellicum Pharmaceuticals Clinical Pipeline

Figure 14-3: DCPrime Clinical Pipeline

Figure 14-4: ImmunoCellular Therapeutics Clinical Pipeline

Figure 14-5: Immunicum Clinical Pipeline

Figure 14-6: Medigene Clinical Pipeline

Figure 14-7: Northwest Biotherapeutics Clinical Pipeline

Figure 14-8: SOTIO Clinical Pipeline

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