Use Of Viral IL-6 To Modulate Monocyte Differentiation To Boost Anti-Tumor Immunity

Tech ID: 33317 / UC Case 2022-582-0

ABSTRACT

Researchers at the University of California, Davis have developed a virally derived homolog to increase the inflammatory response desirable in cancer immunotherapy.

FULL DESCRIPTION

Researchers at the University of California Davis have developed the use of a virally derived homolog of interleukin-6 (vIL-6) to increase the inflammatory response desirable in cancer immunotherapy. The technology promotes dendritic cell differentiation and M1 macrophage differentiation from monocytes, unlike human IL-6, and doesn't trigger anti-inflammatory negative feedback mechanisms. The technology includes the RNA- and viral vector-based delivery of vIL-6-encoding nucleic acids.

Unlike IL-6, vIL-6 does not trigger negative feedback regulation, thus providing a unique benefit when it's used therapeutically as it does not limit its own efficacy by self-downregulation. This new technology aims to enhance cancer therapy by combining the administration of vIL-6 with an anti-cancer therapeutic agent, especially an anti-cancer immunotherapeutic agent.

APPLICATIONS

▶ Development of new medication and treatments for cancer
▶ Potential use in research and development in the medical and pharmaceutical industry
▶ Useful in the field of cancer therapeutics, specifically in immunotherapy
▶ Potential application in the manufacturing of cell culture mediums
▶ May be incorporated into various delivery systems such as viral vector-based delivery, liposomal formulations, transdermal patches, etc for treating cancer

FEATURES/BENEFITS

▶ Increases the inflammatory response desirable in cancer therapies
▶ Promotes dendritic cell differentiation and M1 macrophage differentiation
▶ Utilizes RNA- and viral vector-based delivery for effective implementation
▶ Does not self-downregulate which is an issue with existing therapies that are limited by negative feedback mechanisms
▶ Can be applied in various formats such as protein form or nucleic acid form
▶ Potential supplement for cell culture to enhance the recovery and efficacy of dendritic cells

PATENT STATUS

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Additional Patent Pending

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

▶ Transcription Active Complex Targeting Cancer Drug From Viral Protein Sequence
▶ CHD4 Targeting Peptide Isolated From Viral Protein For Cancer Therapeutics
▶ Cellular Protein CDH4 Inhibiting Peptide