TOOLS TO TARGET NATURAL AND SYNTHETIC NUCLEOTIDE-SENSING PATHWAYS

Tech ID: 33119 / UC Case 2023-117-0

BRIEF DESCRIPTION

The invention involves compositions and methods that deploy ddhNTPs (deoxy-dihydro-nucleoside triphosphates) as immunomodulatory therapeutics. These tools are designed to modulate P2 receptors, act as nucleotidase inhibitors, and have a wide range of applications including host-acting anti-infectives, oncolytics, anti-aging treatments, tissue regeneration, and green pesticides targeting plant P2K receptors. This invention represents a significant advancement in the field of nucleotide-sensing pathway modulation, offering innovative solutions for both medical and agricultural challenges.

SUGGESTED USES

- Immunomodulatory Therapeutics: ddhNTPs can be used to modulate immune responses by targeting P2 receptors, which play a crucial role in various immune functions.
- Nucleotidase Inhibitors: These compositions can inhibit nucleotidases, enzymes that break down nucleotides, thereby influencing nucleotide signaling pathways.
- Host-acting Anti-infectives: ddhNTPs can be employed to enhance the host's immune response against infections without directly targeting the pathogens, reducing the risk of resistance development.
- Oncolytics: The invention can be used in cancer treatment by modulating nucleotide-sensing pathways to induce cancer cell death.
- Anti-aging Treatments: By influencing nucleotide signaling, ddhNTPs can be used to promote cellular health and longevity.
- Tissue Regeneration: These tools can aid in the regeneration of damaged tissues by modulating nucleotide-sensing pathways involved in cell growth and repair.
- Green Pesticides: ddhNTPs can act on plant P2K receptors to provide a sustainable and environmentally friendly approach to pest control.

ADVANTAGES

- Targeted Modulation: The ability to specifically target P2 receptors and nucleotide-sensing pathways allows for precise therapeutic interventions.
- Broad Applications: The versatility of ddhNTPs enables their use in a wide range of medical and agricultural fields.
- Reduced Resistance: Host-acting anti-infectives reduce the likelihood of pathogens developing resistance compared to traditional antibiotics.
- Enhanced Efficacy: By modulating key pathways, ddhNTPs can enhance the effectiveness of treatments for cancer, aging, and tissue regeneration.

CONTACT

Laleh Shayesteh
lalehs@berkeley.edu
tel: 510-642-4537.



INVENTORS

» Cox, Jeffery S.

OTHER INFORMATION

CATEGORIZED AS

» **Agriculture & Animal Science**
» Other
» **Biotechnology**
» Health
» Other
» **Medical**
» Disease: Cancer
» Disease: Infectious Diseases
» Disease: Metabolic/Endocrinology

RELATED CASES

2023-117-0

- Environmental Sustainability: The use of ddhNTPs as green pesticides offers a safer alternative to chemical pesticides, promoting ecological balance.

RELATED MATERIALS

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University of California, Berkeley Office of Technology Licensing
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