Methods of Improving Cancer Immunotherapy

Tech ID: 34444 / UC Case 2022-599-0

ABSTRACT

Researchers at the University of California, Davis have developed methods that combine immunotherapeutic agents with dual inhibitors to enhance cancer treatment efficacy and prolong patient survival.

FULL DESCRIPTION

This technology provides methods for preventing, suppressing, or treating cancer by administering at least one immunotherapeutic agent alongside a dual inhibitor of COX-2 and soluble epoxide hydrolase (sEH), or an sEH inhibitor alone. The approach can include immune checkpoint inhibitors targeting PD-1, PD-L1, LAG-3, or CTLA-4, and may be combined with chemotherapeutic agents or dietary modifications involving high omega-3 or omega-6 intake. These methods are applicable to a wide range of cancers including bladder, ovarian, breast, and lung cancers, aiming to improve immunotherapy effectiveness and patient outcomes.

APPLICATIONS

- Oncology therapies targeting bladder, breast, ovarian, lung, and other cancers.
- Combination cancer immunotherapies.
- Pharmaceutical development of dual COX-2 and sEH inhibitors.
- Immune checkpoint inhibitor therapies.
- Adjunct cancer treatment involving nutritional interventions.

FEATURES/BENEFITS

- Enhances the effectiveness of existing immunotherapies.
- Prolongs survival in cancer patients.
- Modulates immune response through dual inhibition of COX-2 and sEH.
- Enables flexible treatment by combining immune checkpoint inhibitors with chemotherapy and dietary approaches.
- Applies treatment strategies across multiple cancer types.
- Improves immunotherapy response rates in cancers with high non-responsiveness (e.g., bladder cancer).
- Reduces toxicity associated with immunotherapy.
- Overcomes resistance to immune checkpoint inhibitors.
- Provides alternative options for patients unresponsive to existing treatments.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20250205217	06/26/2025	2022-599

CONTACT

Amir J. Kallas
ajkallas@ucdavis.edu
tel: .

INVENTORS

- Hammock, Bruce D.
- Hwang, Sung Hee

OTHER INFORMATION

KEYWORDS

cancer, chemotherapy, checkpoint inhibitors, COX-2, immunotherapy, immune checkpoint, soluble epoxide hydrolase, sEH inhibitor, treatment, omega-3

CATEGORIZED AS

- **Medical**
  - Disease: Cancer
  - Therapeutics

RELATED CASES

2022-599-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Method of Preventing Bone Loss and Periodontal Disease
- Multi-Target Inhibitors for Pain Treatment
- Improved Dioxin Detection and Measurement
- Detection System for Small Molecules
- Small Molecule sEH Inhibitors to Treat Alpha-Synuclein Neurodegenerative Disorders
- Soluble Epoxide Hydrolase-Conditioned Stem Cells for Cardiac Cell-Based Therapy
- Targeting Cancer Cachexia with Soluble Epoxide Hydrolase Inhibitors
- Beneficial Effects of Novel Inhibitors of Soluble Epoxide Hydrolase as Adjuvant Treatment for Cardiac Cell-Based Therapy
- Antibodies: Bacillus Delta Endotoxin PAbs
- Antibodies: Bromacil Herbicide PAbs
- Potential Therapeutic Agent for Laminitis in Equines
- Novel Neuropathy Treatment Using Soluble Epoxide Inhibitors
- Novel and Specific Inhibitors of p21
- Antibodies for Pseudomonas (P.) aeruginosa
- Inhibitor for Preventing the Onset of Neurodevelopmental Disorders
- Antibodies: Urea Herbicide Pabs
- Bioavailable Dual sEH/PDE4 Inhibitor for Inflammatory Pain
- Chemical Synthesis of Lipid Mediator 22-HDoHE and Structural Analogs
- Antibodies: Triazine Herbicide Pabs
- Optimized Non-Addictive Biologics Targeting Sodium Channels Involved In Pain Signaling
- Soluble Epoxide Hydrolase Inhibitors For The Treatment Of Arrhythmogenic Cardiomyopathy And Related Diseases
- A New Pharmaceutical Therapy Target for Depression and Other Central Nervous System Diseases

University of California, Davis
Technology Transfer Office
1 Shields Avenue, Mrak Hall 4th Floor,
Davis,CA 95616

Tel:
530.754.8649
techtransfer@ucdavis.edu
https://research.ucdavis.edu/technology-transfer/
Fax:
530.754.7620