Methods for Disrupting HIV Latency Using Anti-HIV Latency Agents

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CONTACT
Raj Gururajan
rgururajan@ucdavis.edu
tel: 530-754-7637.



ABSTRACT

Researchers at the University of California, Davis have developed methods for reactivating latent viral infection in peripheral blood samples of human immunodeficiency virus (HIV)-infected individuals receiving anti-retroviral therapy and for optimizing the process by including additional reactivation agents.

FULL DESCRIPTION

Observation of HIV rebound following anti-retroviral therapy (ART) interruption has indicated that the start of early ART is not sufficient to eradicate latent virus reservoirs. Findings in a recent publication showed that HIV viral reservoirs are rapidly seeded, and HIV latency could be immediately established after virus infection.

While ART is able to reduce the spread of HIV and halt disease progression by inhibiting viral replication, the viral reservoirs in cells with latent HIV infection have yet to be adequately targeted through structured disruption. A therapeutic cure for HIV that leads to the elimination of the virus from infected individuals is needed, as well as strategies to directly target HIV latent reservoirs.

Researchers at the University of California, Davis have developed methods for reactivating latent viral infection in peripheral blood samples of human immunodeficiency virus (HIV)-infected individuals receiving antiretroviral therapy and for optimizing the process by including additional reactivation agents. These methods would allow for the elimination of viral reservoirs in cells harboring latent HIV. This is achieved by administering the activator(s) to induce viral replication in a controlled manner, avoiding excessive inflammation, yet allowing the detection of infected cells and their eradication by the immune system and virus specific antibodies and T cells.

APPLICATIONS

- Treatment of latent viral infections
- HIV treatment

FEATURES/BENEFITS

- Ability to reactivate latent viral infections
- Increased efficacy of ART in HIV treatment

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,376,486	08/13/2019	2015-096
Patent Cooperation Treaty	Published Application	WO 2016/022358	02/11/2016	2015-096

RELATED MATERIALS

- Synergistic Reactivation of Latent HIV Expression by Ingenol-3-Angelate, PEP005, Targeted NF-kB Signaling in Combination with JQ1 Induced p-TEFb Activation. Jiang G, Mendes EA, Kaiser P, Wong DP, Tang Y, Cai I, Fenton A,

INVENTORS

- Dandekar, Satya
- Jiang, Guochun

OTHER INFORMATION

KEYWORDS

human immunodeviciency virus (HIV), viral infection, anti-retroviral therapy (ART), latency agent, provirus

CATEGORIZED AS

- **Biotechnology**
  - Health
- **Medical**
  - Disease: Infectious Diseases
  - Other
  - Therapeutics

RELATED CASES

2015-096-0

Melcher GP, Hildreth JE, Thompson GR, Wong JK, Dandekar S. PLoS Pathog. 2015 Jul 30;11(7):e1005066. doi: 10.1371/journal.ppat.1005066. eCollection 2015 Jul. - 07/30/2015

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Generation of Novel Biotherapeutic (UCD3R) to Repair, Restore and Regenerate Epithelial and Neuronal Systems
- Molecule for Repairing Leaky Gut And Restoring Energy Metabolism
- Advanced Combination Therapy for HIV using Bioactive Lipids with ART

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

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