THE BUSINESS PARTNER
FOR YOUR IDEAS

INHIBITION OF HERPES VIRUS REPLICATION

THERAPEUTICS

Spironolactone derivatives that prevent release of infectious particles from EBV, KSHV, and HSV infected cells.

TECHNOLOGY TYPE

Infectious Disease
Drug Repurposing

STAGE OF DEVELOPMENT

- Spironolactone and derivatives shown to have antiviral effects in EBV, KSHV, and HSV through *in vivo* testing.

- Derivatives shown to have lost canonical anti-mineralocorticoid activity.

- Ongoing animal studies.

LEARN MORE

Reference Number: U-6459

Aaron Duffy
Technology Manager
aaron.duffy@tvc.utah.edu
801-585-1377

TECHNOLOGY SUMMARY

Available antiherpesvirus drugs target viral DNA polymerases. These drugs are usually highly effective, although toxicity and development of resistance limit their use. Derivatives of Spironolactone, an existing drug used to treat congestive heart failure, cirrhosis, and kidney problems, inhibit replication of Epstein-Barr virus (EBV), Kaposi's sarcoma-associated herpesvirus (KSHV), and Herpes Simplex Virus (HSV). These derivatives exhibit decreased anti-mineralocorticoid activity and increased antiviral activity. The proposed therapeutic degrades cellular transcription factors related to virus production, lytic replication and gene expression. Use of this therapeutic has the potential to prevent KSHV and treat infectious mononucleosis, CMV, and HSV infections.

FEATURES AND BENEFITS

- Utilizes a new mechanism of action, which improves efficacy.
- Decreases incidence of resistance leading to better patient outcomes and potential use as a second-line treatment.
- Reduces toxicity.
- Demonstrates potential for use as a broad spectrum anti-viral drug.

RECENT PUBLICATIONS

Verma, D., Thompson, J., Swaminathan, S. (2016). Sprionolactone blocks Epstein-Barr virus production by inhibiting EBV SM protein function. *Proceedings of the National Academy of Sciences of the United States of America*. 113(13):3609-3614. doi: 10.1073/pnas.1523686113
University of Utah Health Sciences. "Hidden in plain sight: Well-known drug could yield new treatment for herpes viruses: Heart failure drug shown to also inhibit Epstein Barr virus by targeting a pathway common to all herpesviruses." ScienceDaily. ScienceDaily, 14 March 2016. <www.sciencedaily.com/releases/2016/03/160314161234.htm>.

INVENTOR PROFILE

Sankar Swaminathan, M.D., Professor - Infectious Disease
Dinesh Verma, Ph.D., Research Assistant Professor - Infectious Disease

DATE UPDATED: 4/10/2018