

# Novel Inactivated Virus Vaccine Against Herpesviruses

Tech ID: 22936 / UC Case 2011-325-0

## BACKGROUND

Herpes simplex virus type 2 (HSV-2) infection is the most common cause of genital herpes, a sexually transmitted disease estimated to affect more than 500 million people worldwide. About one in six people in the United States aged between 14 and 49 years has genital herpes caused by HSV-2. In addition to causing painful recurring genital sores and emotional stress in those infected, the disease can be particularly severe in immunosuppressed patients and can cause death or brain damage in babies born to infected mothers. Antiviral drugs are being used widely to treat HSV-2, but they are ineffective at eradicating the disease. There is therefore an urgent need for a safe and effective HSV-2 vaccine.

## TECHNOLOGY DESCRIPTION

Researchers at the University of California have developed a new and very effective method of vaccination against HSV2. The vaccine consists of a combination of inactivated herpesvirus mixed with the adjuvants monophosphoryl lipid A (MPL) and alum. The invention has been proved in animal models to afford complete protection against acute and recurrent HSV-2 genital diseases, and provided significantly higher levels of protection against both disease and virus shedding compared with another vaccine now in clinical trials.

## APPLICATIONS

Prophylactic and therapeutic vaccines against herpesviruses associated diseases.

## STATE OF DEVELOPMENT

Inventors have validated the novel vaccine *in vivo*, using mouse and guinea pig models. The vaccine was able to completely protect against both acute and recurrent lesion development, and to clear the virus from the dorsal root ganglia. Ongoing studies show that further modifications to the technique produce even greater therapeutic efficacy.

## INTELLECTUAL PROPERTY INFO

Worldwide rights are available. Publication # WO 2013/006569 A2, Application # PCT/US2012/045290

For background information please also see case number 2006-121.

## RELATED MATERIALS

- ▶ Morello CS, et. al., Inactivated HSV-2 in MPL/alum adjuvant provides nearly complete protection against genital infection and shedding following long term challenge and rechallenge. *Vaccine*. 2012 Oct 12;30(46): 6541-50. - 10/12/2012
- ▶ Morello CS, et al., Immunization with Herpes Simplex Virus 2 (HSV-2) Genes plus Inactivated HSV-2 Is Highly Protective against Acute and Recurrent HSV-2 Disease. *J Virol*. (2011) 85(7): 3461-72. - 04/01/2011

## PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,555,100	01/31/2017	2011-325

## ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

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## INVENTORS

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## OTHER INFORMATION

### CATEGORIZED AS

- ▶ Medical
  - ▶ Disease: Infectious Diseases
  - ▶ Vaccines

### RELATED CASES

2011-325-0

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