

**ASX ANNOUNCEMENT****ADMEDUS ANNOUNCES FURTHER DATA FROM HERPES SIMPLEX  
VACCINE TRIAL**

- **Study achieves primary endpoint of safety**
- **Results show T-cell response in 95% (19 of 20) study subjects**
- **Local response clearly dose dependent**
- **Program progressing into Phase II by end-2014**

**Brisbane, Australia, 2 October, 2014**

Admedus Ltd (ASX:AHZ) today announced the final results from its Phase I Herpes Simplex Virus (HSV-2) vaccine study. The trial reached its primary endpoint of safety and also showed that 95% of trial participants met the clinical trial T-cell positive response endpoint, generating a positive T-cell response to HSV-2 vaccine antigens. The T-cell responses observed support the progression of the vaccine into a Phase II study

*"The very encouraging results, clean safety profile and cellular immune responses demonstrated in this HSV-2 study are particularly encouraging and validate the potential of our range of therapeutic vaccines which utilises Professor Frazer's novel immunotherapy technology,"* said Lee Rodne, Chief Executive Officer of Admedus.

*"The clean safety profile and strong dose-dependent cellular immune responses observed, following intradermal injection of the HSV-2 vaccine in this study, were as expected with this vaccine technology,"* said Professor Ian Frazer, Chief Scientific Officer and Chairman of Admedus Vaccines. *"The results support the progression of this vaccine candidate into Phase II studies"*

The Phase I study was undertaken in healthy volunteers who were confirmed sero-negative for the HSV-2 virus, with subjects screened prior to vaccination. The purpose of the study was to explore safety, as well as to examine any immune response.

19 of the 20 study subjects generated a positive T-cell response (HSV-2 cell mediated immunity) as defined in the clinical trial protocol. One study subject in the 3<sup>rd</sup> lowest dose (100 mcg) did not show an immune response. The cell mediated immunity response shown in this study, where the study subjects had no previous HSV-2 infection, demonstrates utility of this vaccine. The T-cell response was measured using peripheral blood mononuclear cells (PBMCs) isolated to measure T-cell responses to HSV gD2 antigen stimulation by IFN- $\gamma$  ELISPOT assay.

*"We are looking forward to advancing our HSV-2 vaccine into a Phase II clinical study later this year. We will continue advancing our vaccines to treat Human Papillomavirus and cervical cancer"* said Lee Rodne.

Over the course of the study, the 3 intradermal injections of the vaccine were found to be safe and well tolerated with some local redness being observed post injection which dissipated over time. During the study minor adverse events (AEs) were reported but considered unrelated to the vaccine. One serious adverse event (SAE) was also reported during the study; however this were unrelated to the vaccine.

In addition, there was a local immune response at the site of injection, a delayed-type hypersensitivity (DTH) response, 24 and 48 hours after each vaccination (see additional detail below). These results showed a clear dose response over the 3 injections and illustrated that patients confirmed to be sero-negative for HSV-2 had generated an immune response to the vaccine.

The DTH response is a cell mediated response. The cascade of events initiated by the T cells leads to hardening (induration) and redness (erythema) at the injection site, which was clearly evident in these study subjects.

Third party assays testing for antibody activation found no significant antibody responses; however additional antibody assays undertaken by Professor Frazer and his team showed that antibodies against HSV-2 were present, which suggests the results for antibodies are inconclusive and will be explored further in the Phase II study.

The results demonstrated that anti-DNA antibodies, post-vaccination, were not present, indicating no unwanted immune response by the study subjects to the vaccine.

The safety profile and the detected immune response provides the basis for the Company to select appropriate vaccine doses to progress the therapeutic vaccine into a Phase II study in individuals suffering recurrent genital lesions. The Phase II study is anticipated to be initiated by the end of the year.

Currently there is no cure for Herpes and incidence is high. The US Centres for Disease Control and Prevention (CDC) estimates that 1 in 6 people in the USA between the age of 14 and 49 have contracted the infection. There is currently no cure for Herpes Simplex 2 infection.

The Company will look to present the data at a conference in the future.

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## **About Admedus Limited**

Admedus (ASX: AHZ) is a diversified healthcare company focused on developing next generation technologies with world class partners, acquiring strategic assets to grow its product and service offerings and expanding revenues from its existing profitable medical sales and distribution business. The Company has assets from research & development through clinical development as well as sales, marketing and distribution.

Admedus is in the process of commercialising its innovative tissue engineering technology for regenerative medicine. Admedus also has a major interest in developing the next generation of vaccines with a Brisbane-based research group led by Professor Ian Frazer. The vaccine programmes target disease with significant global potential such as Herpes and Human Papillomavirus.

Further information on the Company can be found on [www.admedus.com](http://www.admedus.com)

## **About Admedus Vaccines**

Admedus Vaccines was founded in 2000 by the founder inventor Professor Ian Frazer as a private unlisted company, to develop and commercialise patented technology for improving immune responses to DNA vaccines licensed by UniQuest Pty Ltd and developed at the University of Queensland. The company has laboratories within the Translational Research Institute at the Princess Alexandra Hospital in Brisbane. The company's overall objective is to utilise its unique optimisation technology to produce prophylactic and/or therapeutic DNA vaccines for a range of infectious diseases and cancers in humans.

## **About Admedus Vaccines's optimised technology**

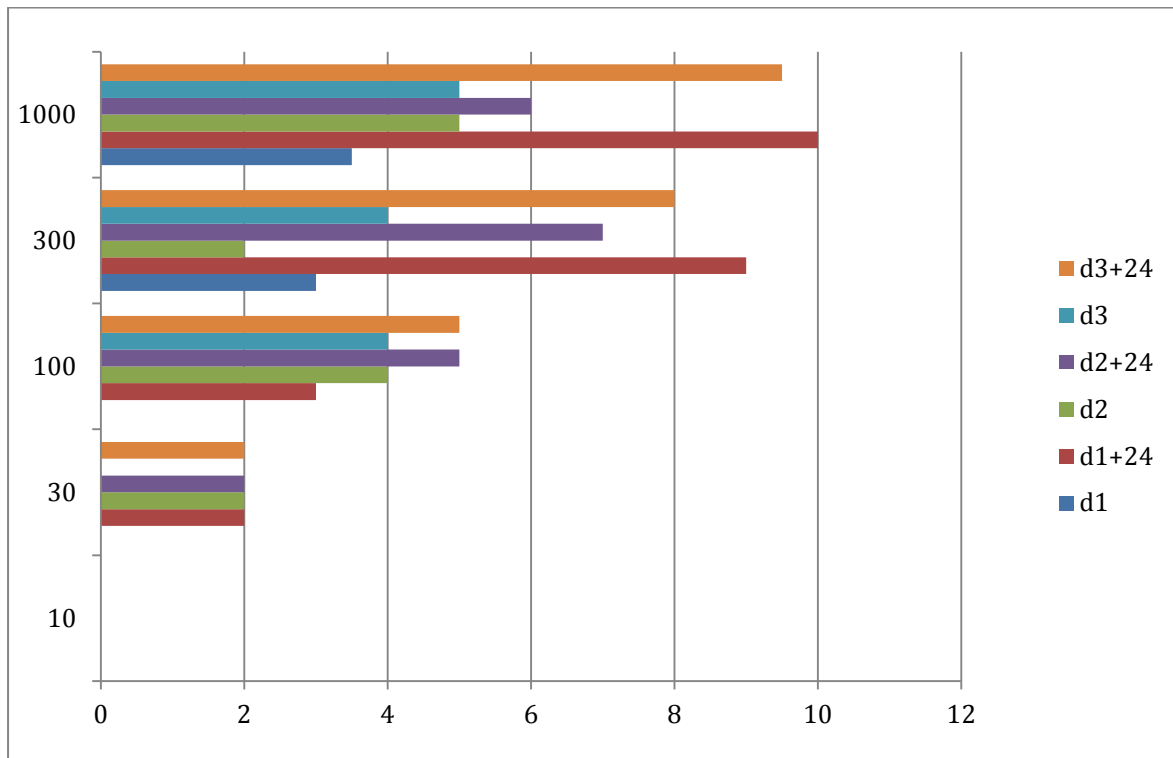
Admedus Vaccines has 6 granted US patents protecting its codon optimisation DNA technology, which enhances protein expression in the cell or tissue targeted and results in an improved humoral response. The second component of the technology, also patent protected, is to use a mixture of DNAs encoding ubiquitinated and non ubiquitinated proteins. This strategy enhances the degradation of the protein and optimises T cell responses, while preserving structural epitopes necessary for B cells responses, resulting in vaccines with prophylactic and therapeutic potential.

## **About Genital Herpes**

This disease often results in recurrent painful sores in the genital area. HSV-2 is the major causative agent of genital herpes. As well as pain and discomfort to infected individuals, the virus can have serious health implications for babies born to infected women. Herpes is also believed to aid in the transmission of HIV. Current herpes treatment involves the use of antiviral drugs which can reduce, but not eliminate, outbreaks and shedding and therefore do not prevent spread of the disease. According to research reported in Biomed Central's journal BMC Infectious Diseases, the economic burden of genital HSV infection and resulting complications has been estimated to be greater than \$1 billion annually in the USA alone.

## **Additional study data**

The following is a summary of the delayed-type hypersensitivity (DTH) data. This graph shows the local immune response score (0 to 12)(x-axis) vs of the 5 doses used in the Phase I study (10mcg, 30 mcg, 100 mcg, 300 mcg and 1000 mcg) (y-axis); although the 1000mcg dose was given in two injections, one injection per arm and therefore the 1000mcg results are an average of the two injections rather than a combination (total) of the two arms.



The doses are:

D1 = local immune response 24 hrs after initial vaccine dose

D1+24 = local immune response 48 hours after initial vaccine dose

D2 = local immune response 24 hrs after 2<sup>nd</sup> vaccine dose

D2+24 = local immune response 48 hours after the initial vaccine dose

D3 = local immune response 24 hrs after the 3<sup>rd</sup> and final vaccine dose

D3+24 = local immune response 48 hours after the 3<sup>rd</sup> and final dose

The Y axis is the vaccine dose units in micrograms (mcg)

The X axis relates to the size (immune score) of the local immune response (DTH score)

**DTH patient images at 24 hours and 48 hour post third injection.**

