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ASX Announcement

Proof of Principle shown in liver disease vaccine program

Highlights

- BioDiem's vaccine program targeting liver disease underway at the University of Canberra
- Researchers successfully establish new system designed to deliver drugs specifically to the liver
- Treatments for viral hepatitis and liver cancer represent large markets where new effective therapies are required.

Melbourne, 22 July 2013: Australian infectious disease therapy and vaccine development company BioDiem Ltd (ASX: BDM) has announced that its hepatitis vaccine program has successfully achieved an important milestone towards developing treatments for liver diseases.

Researchers at the University of Canberra have developed a system designed to target the liver specifically to deliver therapies directly there. This would be relevant for hepatitis and liver cancer, for example. Due to this targeting, smaller dosages of currently used therapies could be given to liver disease patients. This could result in higher cure rates and/or fewer dose-related side effects.

The groundbreaking work done recently has shown that the hepatitis D virus, which has been used as the basis for the technology, can be engineered into a stable and replication-competent virus (called a vector).

"This is an important breakthrough, which shows promise to support an array of new therapies targeting liver disease," said BioDiem CEO Julie Phillips. "We have filed international patents for this new vector technology and we envisage further development for specific treatments targeting viral hepatitis and liver cancer. This opens opportunities for vaccine manufacturers to design vaccines to target the liver selectively."

"The work conducted by the team at the University of Canberra has allowed us to file the patents necessary to protect the inventions associated with the development of this novel vector."

Professor Ian Ramshaw from the University of Canberra said it was a significant development in the science supporting treatment of serious human disease affecting the liver. Currently treatments are rarely curative and often are associated with side effects which can cause patients to cease treatment. A targeted approach would open the possibility of better results for patients.

An estimated 4.4 million Americans are living with chronic hepatitis, most of whom do not know they are infected. Viral hepatitis is the leading cause of liver cancer and the most common reason for liver transplantation. Liver cancer in men is the fifth most frequently diagnosed cancer worldwide and is the second leading cause of cancer-related death in the world. The global hepatitis market was estimated to be \$3.2bn in 2009, representing a compound annual growth rate (CAGR) of 3.1% between 2001 and 2009. The market is anticipated to reach revenues of approximately US\$5.9bn by 2016, growing at a CAGR of 9% between 2009 and 2016. The chief reason for its growth is the large chronic carrier hepatitis population, primarily Hepatitis B and C.

BioDiem Ltd has a worldwide exclusive license to the technology from the University of Canberra.

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About BioDiem Ltd

BioDiem (ASX: BDM) is an ASX-listed biopharmaceutical company developing vaccines and antimicrobials targeting treatment and prevention of infectious diseases and related cancers. The lead technology is the LAIV (Live Attenuated Influenza Virus) used for seasonal and pandemic influenza vaccines and is given intranasally. A therapeutic hepatitis vaccine project targeting hepatitis D and B is underway at the University of Canberra. BioDiem's antimicrobial, BDM-I, is in preclinical development for fungal and bacterial diseases, also schistosomiasis, tuberculosis and protozoal infections. The SAVINE (scrambled antigen) technology is in development for tuberculosis and also EBV-related disease including nasopharyngeal cancer. BioDiem's retinal product, BDM-E, in development for retinitis pigmentosa is available for outlicence.

About BioDiem's Liver-Targeted Technology

The vector is based on the Hepatitis D virus (HDV) which is a small, enveloped RNA virus requiring the envelope proteins of a helper virus, Hepatitis B virus (HBV), for further particle formation. HDV can only infect liver cells and produce virus particles in cells that are also infected with HBV. Based on this natural tropism for the liver and the successful generation of replication-competent recombinants this technologically has the potential to deliver biologically active therapies to the liver.

For additional information, please visit www.biodiem.com

About University of Canberra

The University of Canberra is Canberra's own university. It has a dynamic, innovative and collaborative research culture with a focus on applied research in areas aligned with the needs of our local community as well as national and international research priorities. The University of Canberra's researchers deliver breakthroughs that help solve real-world problems, particularly in the areas of governance, environment, communication, education and health.

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