

## ASX ANNOUNCEMENT

### Update: Partnering & Licensing Focus Continues

- Exopharm's Dr Ian Dixon (CEO) and Dr Chris Baldwin (CCO/Deputy CEO) will host a shareholder update webinar 10:30am AEST on Tuesday 13 July 2021 at <https://exo.ph/JulyUpdate2021>
- Exosomes are an ideal way to deliver nucleic acid medicines
- Exopharm's LEAP purification technology highlighted in June edition of industry publication *BioProcess International*
- Exosomes from blood products is an emerging product category

**2 July 2021, Melbourne, Australia:** Exopharm Limited (ASX:EX1) is a clinical-stage company at the forefront of developing transformative exosome therapeutics.

#### Webinar invitation

A webinar to engage with shareholders is scheduled for 10:30am AEST on Tuesday 13 July 2021. Exopharm's Dr Ian Dixon, CEO, and Dr Chris Baldwin, CCO/Deputy CEO, will discuss recent Company updates and ongoing commercial activity. A live Q&A will follow.

The webinar link is <https://exo.ph/JulyUpdate2021>. The webinar is open to all, with no advanced registration required.

#### Nucleic acid medicines – from research to millions of doses in a year

Over the past 18 months we have seen biotechnology harness the latest technologies to deliver new and remarkable messenger ribonucleic acid (mRNA) vaccines against SARS-CoV-2 at unprecedented speed and scale.

The new messenger RNA vaccines made against SARS-CoV-2 are simple and powerful.

Each particle in the vaccine is made of just two components:

- the delivery component – a simple lipid nanoparticle to enable storage, injection and delivery of the active component into cells inside your body; and
- the RNA medicine – a short chemical message called messenger RNA (mRNA) that encodes the sequence that tells the cells in the body to make the SARS-CoV-2 spike protein.

After injection, cells read the mRNA message and produce the viral spike protein as an antigen that stimulates the immune system to recognise the virus spike protein. Then, if the individual gets infected by a real SARS-CoV-2 virus, their immune system is ready to neutralise the virus before it makes them sick and limit its transmission to someone else.

These mRNA vaccines using nanoparticle delivery are superior to alternative vaccine strategies in several respects – they do not use viral vectors, which can cause severe side-effects, and they can be developed more quickly than approaches that rely on traditional egg or recombinant protein technologies.

Exopharm believes that other products can be brought forward with the same speed and success as artificial lipid nanoparticles and mRNA have been for SARS-CoV-2 vaccines.

The Company is building new, simple and powerful medicines to treat other medical problems using exosome nanoparticles and nucleic acid cargo.

Exopharm's products are called *exosome medicines – exosomes delivering nucleic acid medicines*.

- Exosomes are another sort of nanoparticle, similar to but superior in specific ways to lipid nanoparticles.
- The medicines contained within the exosomes can be any nucleic acids including mRNA, DNA, micro RNA (miRNA) and other active cargos.

The combination of exosomes as the delivery vehicle and nucleic acids as the medical cargo can be designed in hundreds of variations to treat many medical problems including cancer, neurological diseases, infectious diseases and rare inherited medical conditions.

Just like with the SARS-CoV-2 vaccine, identifying a nucleic acid sequence to treat a medical problem can be quick and reliable in 2021.

Modern analytical tools enable us to sequence a person's DNA or identify disease-causing deficiencies:

- in people born with rare genetic medical problems, doctors can identify the faulty gene information
- in people with cancer, doctors can sequence tumour cells from the patient and identify a cancer-causing mutation that can be targeted
- if a new virus is identified scientists can sequence the virus and identify its weaknesses.

Exosomes are produced naturally by cells and can be produced and purified in a biomanufacturing facility. They have many advantages over other delivery vehicles and have potential to be used to improve delivery of nucleic acid cargos.

Exosomes:

- are natural and well-accepted by the body
- can deliver the cargo into the cell and even into the nucleus of the cell with high efficiency
- can be loaded with a variety of cargos
- can be targeted to certain cell types to improve the safety and efficacy of the treatment, and
- can replace the use of viral vectors and lipid nanoparticles.

Despite these advantages, it has not been possible to purify exosomes in large scale and as a cost-effective drug delivery ingredient. Invented in 2016, the LEAP technology owned by Exopharm has solved this manufacturing bottleneck. With LEAP purification technology, Exopharm is a leader in exosome medicines.

Exopharm also has two technologies called LOAD and EVPS that enable Exopharm's exosomes to be powerful delivery vehicles for a wide range of medicines.

Experts within the pharmaceutical and medical fields are now looking to harness exosomes as a way of delivering the nucleic acid medicines they have already designed – for rare diseases, gene therapies and antivirals.

At Exopharm we will work with partners to harness exosomes to solve important medical problems.

We see our work in this area as exciting, important and valuable.

#### LEAP commercialisation progress gathers momentum

Exopharm's LEAP technology for exosome purification is gaining a higher profile in industry publications. The June 2021 edition of *BioProcess International* has a technical paper written by the Exopharm team and describing the Ligand-based Exosome Affinity Purification technology. This paper is available at [https://exo.ph/LEAP\\_Paper](https://exo.ph/LEAP_Paper).

The supporting data in the BioProcess paper validates LEAP as a proprietary answer to the downstream processing bottleneck.

This peer-reviewed paper presents data for the first time showing that the LEAP technology has proven to be an efficient, robust, scalable, low-cost, and highly reproducible platform technology and that it offers a combination of advantages when compared with other alternatives.

This publication follows the recent granting of a Russian patent covering the LEAP technology.

Together these recent events support Exopharm's plans to derive income from its LEAP technology through licensing agreements.

### Exosomes from blood products are gaining momentum

Another industry turning towards exosomes is the blood products industry. Donated blood plasma and donor blood platelets are ready sources of exosomes from healthy donors. Exopharm's LEAP purification technology is available under licensing agreements to help these organisations and discussions are underway.

By the Board - this announcement has been authorised for release by the Board.

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### **ABOUT EXOPHARM**

Exopharm (ASX:EX1) is a clinical-stage biopharmaceutical company using exosomes to deliver a new class of transformative medicines and generate revenue from multiple partnership deals.

Exosomes are seen by the Biopharma industry as a highly differentiated platform with the potential to enhance tissue delivery for a variety of payloads like mRNA and proteins – part of the global market for drug delivery systems which is growing at a compound annual growth rate (CAGR) of 5% and valued at around US\$170 billion in 2021.

For some medicines, exosomes are an alternative and superior means for delivery inside the body, alongside technologies such as lipid nanoparticles (LNP), cell penetrating peptides, viral vectors and liposomes.

Exopharm's LEAP technology solves the challenge of purifying clinical-grade exosomes at large scale and low cost.

Exopharm also has two exclusive proprietary technologies that allow advanced customisation of exosomes – the LOAD technology improves loading of nucleic medicines into exosomes and the EVPS technology allows exosomes to be directed towards selected cell types.

Exopharm uses variations and combinations of LOAD and EVPS to enable its Biopharma partners to improve delivery of their drug candidates and help them design and test new exosome medicines aimed at treating a wide scope of medical problems including neurological disease, infectious disease, cancer, and fibrosis.

### **FORWARD LOOKING STATEMENTS**

This announcement contains forward-looking statements which incorporate an element of uncertainty or risk, such as 'intends', 'may', 'could', 'believes', 'estimates', 'targets', 'aims', 'plans' or 'expects'. These statements are based on an evaluation of current corporate estimates, economic and operating conditions, as well as assumptions regarding future events. These events are, as at the date of this announcement, expected to take place, but there cannot be any guarantee that such events will occur as anticipated or at all given that many of the events are outside of Exopharm's control or subject to the success of the Development Program. Furthermore, the Company is subject to several risks as disclosed in the Prospectus dated 6 November 2018.

### **INHERENT RISKS OF INVESTMENT IN BIOTECHNOLOGY COMPANIES**

There are a number of inherent risks associated with the development of biopharmaceutical products to a marketable stage. The lengthy clinical trial process is designed to assess the safety and efficacy of a drug prior to commercialisation and a significant proportion of drugs fail one or both of these criteria. Other risks include uncertainty of patent protection and proprietary rights, whether patent applications and issued patents will offer adequate protection to enable product development, the obtaining of necessary drug regulatory authority approvals and difficulties caused by the rapid advancements in technology. Companies such as Exopharm are dependent on the success of their research and development projects and on the ability to attract funding to support these activities. Investment in research and development projects cannot be assessed on the same fundamentals as trading and manufacturing enterprises. Therefore, investment in companies specialising in drug development must be regarded as highly speculative. Exopharm strongly recommends that professional investment advice be sought prior to such investments.