



Investor Presentation

April 2019



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Cover Page Image: Schematic of exosomes as bio-messengers of regeneration (depicting the secretion of exosomes from an adult stem cell, exosomes in transit and exosomes being taken up by a recipient cell).



INTRODUCTORY VIDEO PRESENTATION



Introductory 3 minute video presentation available at www.exopharm.com

EXOPHARM SNAPSHOT

- 1. Focus on next-generation exosome cell-free treatments for agerelated (health span) conditions
- 2. Australian Stock Exchange (ASX) listed EX1 IPO December '18 having raised A\$7m at 20 cents trading at around 40 cents as at 1st April '19. 80.5m shares on issue Market cap. circa \$32m.
- 3. Exosomes are the natural regenerative nano-particles produced by stem cells and have demonstrated safety and powerful regenerative effects in many animal studies
- 4. Exopharm sees LEAP as the key to solving the bottleneck problem that is delaying the production and purification of clinical-grade exosomes/EVs
- 5. Pre-clinical studies indicate that Exosomes can potentially replace stem cells as a regenerative therapy Exopharm seeks to be disruptive
- 6. The only ASX-listed exosome company (numerous stem cell and cellular therapy companies)
- Based in Melbourne Australia



A sectional schematic of an exosome.



OUR LEADERS



Dr lan DixonFounder, Managing Director & major shareholder

- Founder of Cynata Inc in 2011 now Cynata Therapeutics Ltd (ASX:CYP) a clinical-stage stem cell company and a world-wide leader in iPSC-derived cell therapy technology
- Previously Director of Cell Therapies Pty Ltd company produced Mesoblast's specialised adult stem cells to be used in human pilot trials
- Founded Exopharm in 2013 after identifying the opportunity
- Co-inventor of the LEAP technology after 4 years of R&D and private investment
- PhD in Biomedical engineering from Monash University, MBA and engineering experience
- Non-executive director of Noxopharm Ltd (ASX:NOX) a listed clinicalstage anticancer company. Also director of Medigard Ltd (ASX:MGZ).



OUR LEADERS (continued)



Dr Gregor LichtfussFounder and Chief Operating Officer

- Co-inventor of the LEAP technology
- Full-time COO of Exopharm
- Managing Exopharm's manufacturing, clinical trials, planning & collaborations
- PhD from Monash University & Burnet Institute
- Business studies at Stanford University USA
- Project development manager behind creation of Cardior Pharmaceuticals GmbH



OUR LEADERS (continued)



Mr Jason Watson
Non-Executive Chairman

- Mr Watson has a Bachelor of Laws with Honours and a Bachelor of Commerce
- Independent Director
- Has assisted companies with significant biotech licensing deals
- Principal of Elementary
 Law, a legal practice based in Melbourne, Australia

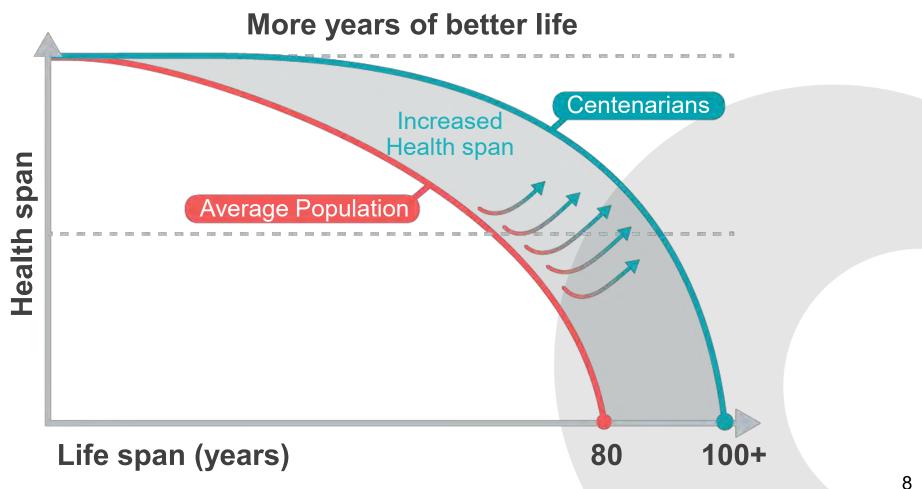


Mr David Parker
Non-Executive Director and
Company Secretary

- Mr Parker has a Bachelor of Commerce from Curtin University and has completed a Graduate Diploma of Applied Corporate Governance from the Governance Institute
- Experienced ASX listed company secretary and director

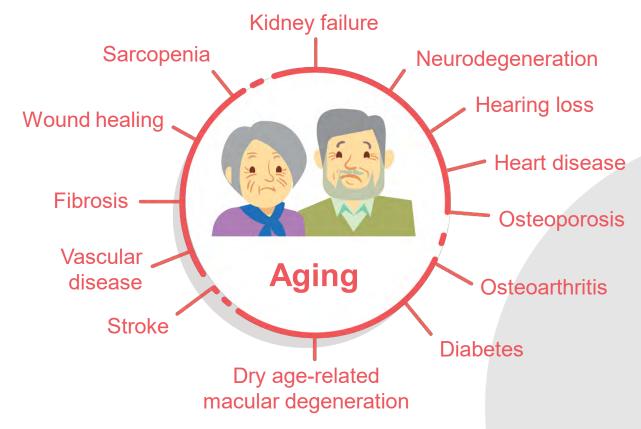


HEALTH SPAN – LIVING BETTER FOR LONGER





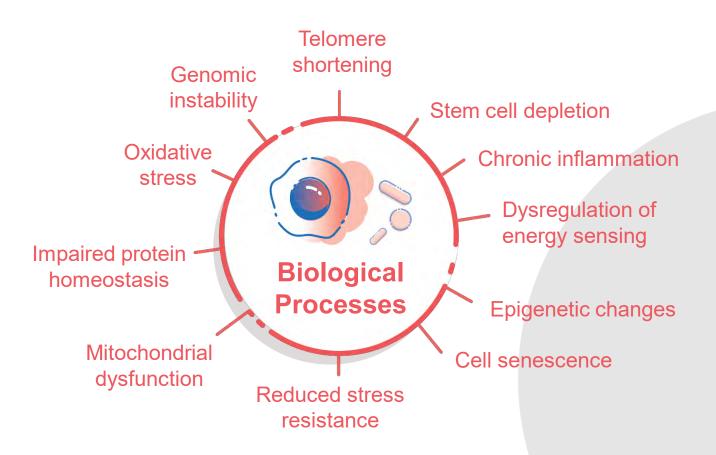
MANY DISEASES IMPACT HEALTH SPAN



"Aging is the leading risk factor for most serious chronic diseases and disabilities, including strokes, heart disease, cancers, dementias, osteoporosis, arthritis, diabetes, metabolic syndrome, kidney failure, blindness, and frailty."



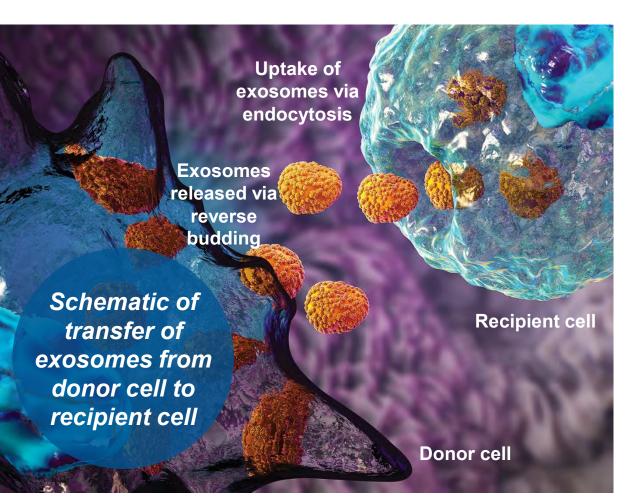
MANY COMPLEX BIOLOGICAL PROCESSES NEGATIVELY IMPACT HEALTH SPAN



Adapted from The Journal of Physiology 594(8) DOI10.1113 /jphysiol.2014.282665



EXOSOMES ARE PRODUCED BY CELLS NATURALLY & DRIVE REGENERATION IN MANY WAYS



Exosomes – also referred to as extracellular vesicles (EVs)

- Exosomes are bio-active nanoparticles/vesicles naturally secreted by adult stem cells and other cells
- Exosomes deliver their multi-modal cargo to cells in our body and reduce inflammation and promote regeneration and healing by multiple mechanisms
- Scientists have discovered much more about the **roles** that natural exosomes play in diseases and regeneration (health span)



STEM CELLS, EXOSOMES FROM STEM CELLS AND AGING





BOOST THE NUMBER OF EXOSOMES TO IMPROVE HEALTH SPAN?

Number of exosomes in the patient's body

Decreasing 'good' exosomes in the body with age

Boost exosomes in the patient's body by treatment

Improved health span?









BUT THERE IS A PROBLEM PREVENTING PROGRESS...

Cells produce trillions of exosomes naturally, the problem has been to purify these natural nanoscale particles as a proper drug product – the 'bottleneck problem'

Other experts in the exosome field say:-

- "Despite these advances, a major bottleneck of MSC derived EV (MSC-EV)-based applications in clinics is the inefficient production and purification of clinical-grade EVs"*
- "Currently, there is **no state-of-the-art technology to isolate EVs**, for either therapeutic application or basic research."**
- "However, currently very few clinical validation studies and no clearly defined manufacturing process exist."***

As yet there are <u>no</u> known clinical trials underway in regenerative medicine with proprietary pharmagrade purified adult stem cell derived exosomes

(See ASX Announcement 27 March 2019 for more information)



EXOPHARM SEES LEAP AS THE KEY TO SOLVING THE BOTTLENECK PROBLEM

Dr Ian Dixon and his R&D team set out to solve this purification bottleneck problem in 2013

By December 2017 they had invented the LEAP Ligands and lodged a patent application on a family of **LEAP Ligands** that purify exosomes



LEAP = Ligand-based Exosome Affinity

Purification

Exopharm owns this LEAP IP – patent applications and associated know how.

The LEAP technology:-

- uses a patent-applied-for inexpensive synthetic affinity ligand to bind to and purify exosomes using affinity chromatography;
- is well suited to biomanufacturing processes and equipment; and
- has the potential to give Exopharm a competitive advantage.

ABOUT OUR COMPETITIVE ADVANTAGE

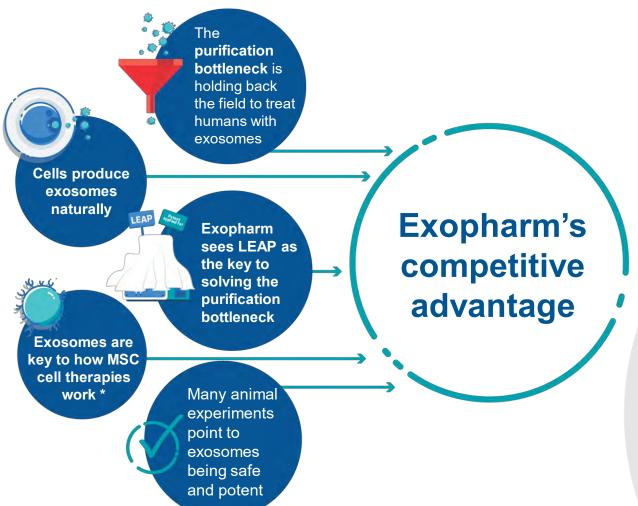
The central feature of the LEAP Technology is the selective binding of the exosomes/vesicles to the LEAP Ligands in a relatively gentle and selective flow-through process.

LEAP Technology has advantages over existing technologies :

- Biologic-type product yields
- Scalable
- Specificity and selectivity
- Gentle
- Familiar purification process (affinity chromatography)
- Less contamination
- Patentable
- Proprietary process gives proprietary product



OUR COMPETITIVE ADVANTAGE IN A SNAPSHOT



"With the LEAP technology to break the purification bottleneck, Exopharm is positioned to be a worldwide leader in the commercialisation of therapeutic exosomes and exosome production"

Dr Ian Dixon Exopharm

^{*} Note: In regenerative medicine. See Slide 19 for more details



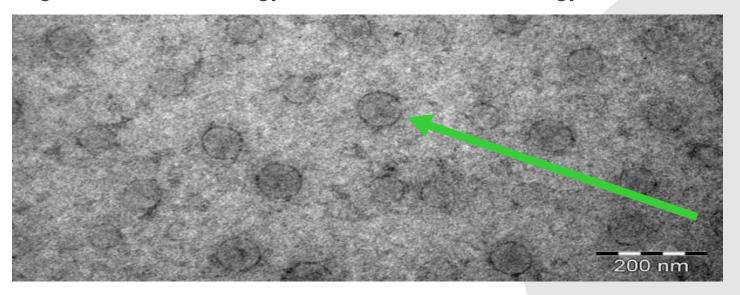
OUR NAMES FOR OUR EXOSOME PRODUCTS

ex¢mere

Exomere TM is our name for exosomes from adult stem cells using the LEAP technology



Plexaris [™] is our name for exosomes from platelets using the LEAP technology



Transmission Electron Microscope (TEM) image of Exomeres from placental MSC culture and purified with LEAP affinity step 2018 - bar is 200 nanometres



EXPERTS SAY THAT EXOSOMES ARE POTENTIALLY BETTER THAN CELLS & CAN REVERSE AGING EFFECTS IN CELLS AND ANIMALS

"These results indicate that exosomes from young mice could reverse the expression pattern of aging-associated molecules in aged mice" doi: 10.2147/IJN.S170680 2018

"In comparison to cell-based therapies, this cell-free regenerative strategy offers a lower risk and potentially higher scalablility" doi: 10.3390/cells7080110 2018

"In the cases where cells and their respective exosomes were studied in parallel, exosome treatment has demonstrated a similar or even superior therapeutic capacity to MSC treatment" doi: 10.3389/fcvm2017.00063 2017

"Extracellular vesicles (EVs) are vital mediators of cell-to-cell communication"



REGENERATIVE MEDICINE

Highly purified human extracellular vesicles produced by stem cells alleviate aging cellular phenotypes of senescent human cells

Johns Hopkins University School of Medicine, Baltimore, Maryland;

2019



STEM CELL EXOSOME MARKET SEGMENTS

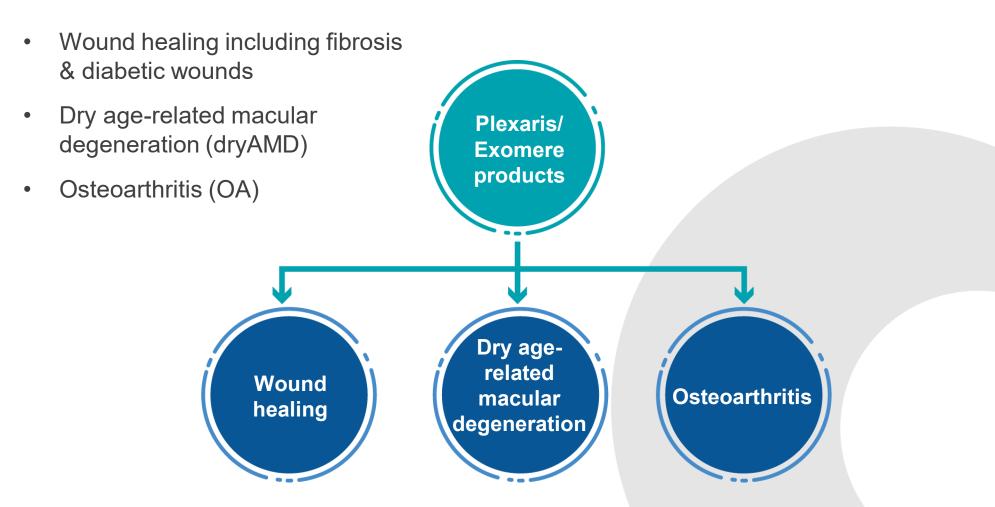


Stem cell exosome market segments and Exopharm's main areas of commercial interest: Core (blue line) and future possible (orange line) commercial areas for Exopharm.

Source: Market segments sourced from BioInformant Stem Cell Exosomes Market Report (See Prospectus for more information)



LEAD INDICATIONS TO PROVE THE TECHNOLOGY



Target medical conditions in the core Exopharm Development Program

DEMONSTRATE TECHNOLOGY TO DE-RISK AND THEN SEEK A PARTNERSHIP / FINANCIAL TRANSACTION



- Plexaris or Exomeres with dermal application to treat wounds
- Small-scale program with manufacture in Melbourne
- Clinical use likely to start with an autologous product
- 6.5 million adults with chronic wounds and 40 million undertaking surgery in USA (2016)



- Plexaris or Exomeres with localized injection to eye
- Small-scale program with manufacture in Melbourne
- Clinical use likely to start with an autologous product
- Around 140 million globally and 9 million USA (2016)



- Plexaris or Exomeres with localized injection to joint
- Small-scale program with manufacture in Melbourne
- Clinical use likely to start with an autologous product
- 30 million adults (USA) and 2 million adults (Australia)

Note. Autologous means from and into the same person (i.e. matched). Allogeneic means donor and recipient are different people (i.e. unmatched).



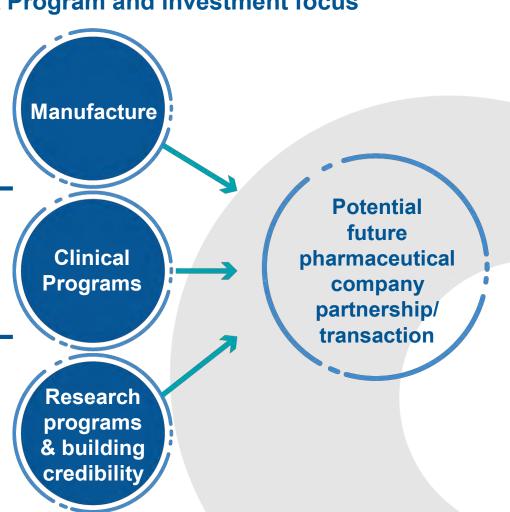
BUILDING AN IMPORTANT INTERNATIONAL COMPANY

Exopharm's Development Program and investment focus

Clinical grade autologous & clinical grade allogeneic – both using LEAP technology –

First in human – then further clinical studies/trials

Studies – publications - collaborations





CLINICAL STAGE COMPANY IN CY '19





Plexaris clinical programs	Study start
Autologous wound healing (PLEXOVAL)	Commence recruitment around mid CY '19
Allogeneic wound healing	CY '20
Allogeneic dry AMD	To be determined
Exomere clinical programs	Study start
Allogeneic osteoarthritis (OA)	To be determined
Allogeneic other indication	To be determined

Note: PLEXOVAL: See ASX announcement dated 1 April 2019 for further information

Note. Future clinical programs to build value in the products & technology for potential financial partnership deals. Clinical programs are subject to regulatory approvals and other risks

Note. **Autologous** means from and into the same person (i.e. matched). **Allogeneic** means donor and recipient are different people (i.e. unmatched).



COMMERCIALISATION PLAN – TWO PROGRAMS TO PARTNER

First development and commercialisation program



Demonstrate safety and efficacy in wound healing in small study Further small studies in other indications and larger Phase IIb studies Partner(s) for a financial transaction

Follow-on development and commercialisation program



Demonstrate safety and efficacy in condition #1 in small study Further small studies in other indications and larger Phase IIb studies

Partner(s) for a financial transaction

\$

CORPORATE SUMMARY

Exopharm Limited

Corporate Information

- Formed in May 2013
- Based in Parkville, Melbourne, Australia
- Staff of around 15 people
- Listed on the Australian Stock Exchange (ASX:EX1) in December '18
- Raised circa \$8.4m so far including pre-seed, seed rounds and at IPO

Intellectual Property

- Intellectual Property (IP) including Patent applications owned by Exopharm
- Key technology is LEAP purification technology
- LEAP IP is covered by a Patent Co-operation Treaty (PCT) application and further June
 '18 provisional patent LEAP PCT will soon enter 13 jurisdictions in National Phase
- Exopharm has use of US trademarks *Plexaris* and *Exomere others pending*
- Exopharm has other proprietary and confidential know-how

CORPORATE SUMMARY (continued)

KEY FACTS	
Capital Structure	
Fully Paid Ordinary Shares on Issue (No other securities on issue)	80,500,000
Current Share Price (1st April 2019)	\$0.40
Market Capitalisation (based on \$0.40)	\$32m
Cash at bank as at 31 December '18 (A\$)	\$6,039,000

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TOP 10 SHAREHOLDERS NAME (as at 25/3/19)	%	No.
ALTNIA HOLDINGS PTY LTD <dixon a="" c="" family=""></dixon>	34.70%	27,935,294
MR M F MCMAHON & MRS S L MCMAHON <mcmahon a="" c="" fund="" super=""></mcmahon>	2.87%	2,310,000
OLDVIEW ENTERPRISES PTY LTD <the a="" c="" priestley=""></the>	1.79%	1,437,890
ANTHONY JOHN LOCANTRO	1.65%	1,330,000
CARDA PTY LTD < CARDA SUPER FUND A/C>	1.51%	1,218,175
PHYTOSE CORPORATION PTY LIMITED <boundaryone a="" c="" super=""></boundaryone>	1.5%	1,176,471
PABASA PTY LTD <kehoe a="" c="" family="" fund="" super=""></kehoe>	1.24%	1,000,000
MRS ANNA FELICIA BELTON	1.17%	943,334
ACNS CAPITAL MARKETS PTY LTD	1.01%	810,000
BASAPA PTY LTD <kehoe a="" c="" family=""></kehoe>	0.93%	750,000



Corporate Advisors Alto Capital

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Exopharm Ltd (ASX-EX1)

Dr Ian Dixon MBA

Founder and Managing Director ian.dixon@exopharm.com

Mr David Parker

Company Secretary and Non-executive Director david.parker@exopharm.com

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www.exopharm.com

Extending health span



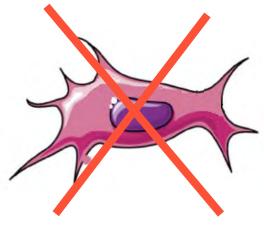
EXTRA SLIDES

RECENT TRANSACTIONS IN THE FIELD

Company	Funding summary	Comments
Codiak Biosciences	January 2019. "Jazz Pharmaceuticals will use Codiak BioSciences' engEx™ precision engineering platform to research, develop, and commercialize exosome therapeutics for cancer through a collaboration that could generate more than US\$1 billion for Codiak."	Focus mainly on cancer, still preclinical
Smith & Nephew	March 2019. Acquired Osiris Therapeutics, Inc. (NASDAQ: OSIR), a company with regenerative medicine products, including skin, bone graft and articular cartilage substitutes for a total equity value of approximately US\$660 million.	Making sales
Exosome Diagnostics	In August 2018 Bio-Techne Corporation (NASDAQ: TECH) completed its acquisition of Exosome Diagnostics, Inc consideration includes an upfront payment of US\$250 million plus an additional US\$325 million that can be maximally earned through calendar year 2022 upon reaching certain performance milestones.	Diagnostics
Cynata	Market capitalisation around A\$125m (in April '19). In May 2018 it was announced that Fidelity International (a global asset manager that invests A\$414.5 billion globally) became a substantial holder of Cynata by investing A\$5.2m. Also partnered with Fuji Film and has Fuji Film as a shareholder	Cellular therapy
ExoCoBio	In May 2017 ExoCoBio announced that it had raised US\$11m Series A funding within 4 months of its formation	Early-stage company



CELLULAR THERAPY HAS ITS PROBLEMS

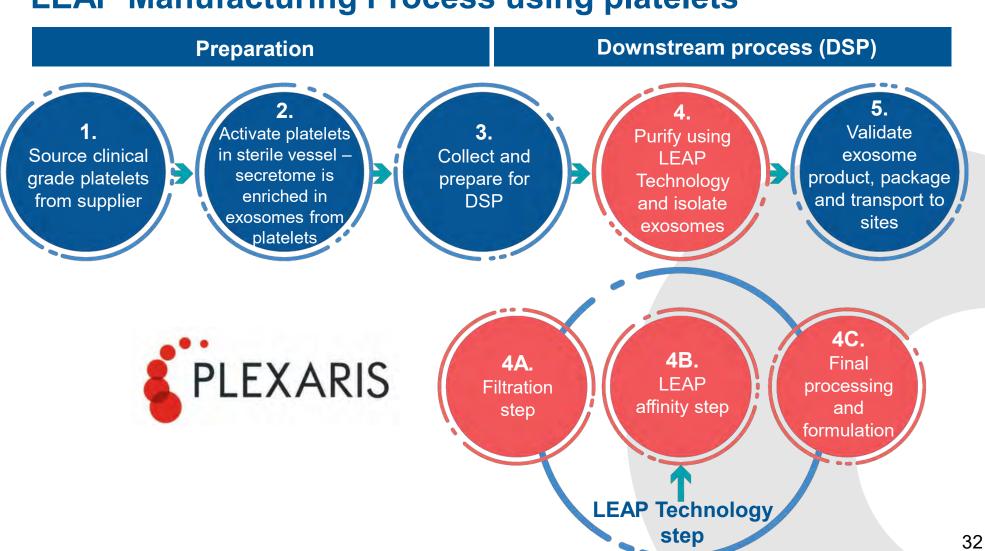


- Cells have problems in transport, storage & thawing at clinic before use
- Unmatched cells can be rejected by the patient's immune system if given multiple times
- Cells can become fibroblasts and cause disease, cells could promote tumour formation or be infected with virus
- The injected cells are typically short-lived (most gone in days), uncontrolled and variable

Our **cell-free** approach has many potential advantages over some cellular products

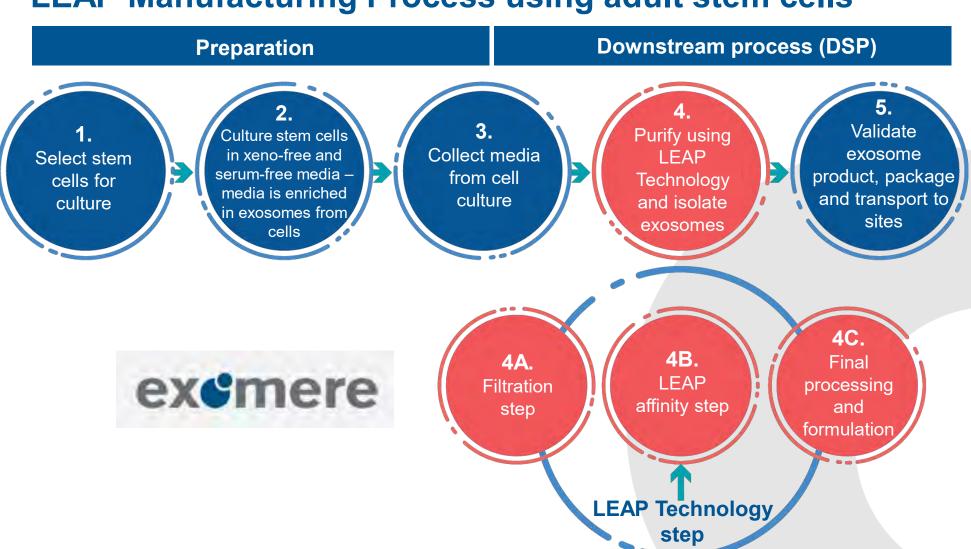


LEAP Manufacturing Process using platelets





LEAP Manufacturing Process using adult stem cells



exc pharm



Some of the Exopharm team in the Laboratory at Parkville Melbourne

