

Braeden Lichti - Extracellular Vesicles: Potential and Profit in the Space Between Cells

With the significant growth in the use of exosomes the trend is set to continue

VANCOUVER, BC, CANADA, April 2, 2020 /EINPresswire.com/ -- What are EVs and Exosomes?

Extracellular vesicles (EVs) are small bodies that are released by parent cells into the fluid between cells, or extracellular space. EVs include microvesicles and smaller nano-scale vesicles called exosomes. EVs perform several important cellular functions, including transferring DNA, RNA, and proteins from source cells to other cells and helping cells communicate with each other.

It used to be thought that EVs were like garbage carriers that take away unnecessary or toxic materials from cells to dump into the extracellular space, but it is now becoming clearer that their work and potential are powerful. EVs are an exciting research topic for researchers, whose breakthroughs in understanding and harnessing EVs are drawing money from the government, philanthropy, venture capital, and public market investors. Exosomes are being used to treat chronic pain, cardiovascular disease, and neurodegenerative disease, and they are being used in many cancers that are otherwise untreatable by standard-of-care drugs and chemotherapy. Exosomes are also being studied and applied in orthopedics, sexual function, hair regrowth, and cosmeceuticals, which are cosmetic products with bioactive ingredients and health benefits.

A Rapidly Growing Market

The period from 2010 to 2020 brought significant growth in the use of exosomes, and the trend is set to continue. [Research firm Grandview](#) Research expects the exosome diagnostics and therapeutics market to exceed more than USD 2.28 billion by 2030. The commercial growth of EVs in the next decade is being catalyzed by investments today by a range of investors.

Companies that have invested into exosome-related therapeutics include corporate venture capital outfits like GV (formerly Google Ventures), which has put money into EV therapeutics companies like Evox Therapeutics. That company raised \$45.4 million in Series B financing in 2018 from GV and others on the strength of its plan to use EV research from a leading Swedish institution and Oxford to deliver small and large molecules to target the human brain and central nervous system. ArunA Bio, which specializes in neural EVs, raised \$13 million in common

stock financing

Massachusetts-based [Codiak Biosciences](#) has raised \$168.5 million through Series C since its 2016 founding. Codiak has paired with Jazz Pharmaceuticals to bring engineered exosomes to market for the treatment of five cancer targets not reachable by known methods, guaranteeing Codiak at least \$56 million upfront. In other joint ventures, PureTech Health PLC has linked up with Roche with an upside potential of over \$1 billion if the exosome company boosts the success of the pharma giant's next wave of drugs.

Public market investors are also showing a deeper interest and willingness to explore EV stocks. There are publicly traded companies specializing in exosomes that retail investors can access, such as Avalon GloboCare (US: AVCO), Capricor Therapeutics, Inc. (US: CAPR) and Australia's Exopharm Limited (ASX-EX1). The rising tide of interest from venture capital to corporate partnership funding that touches retail investors will only swell further as the full potential of EVs across a range of uses becomes clear.

The Academic Research

The cutting edge of drug technology is in academic medicine, and there are strong prospects for a steady pipeline of innovations in both extracellular vesicles and exosomes coming from top institutions globally.

Dr. Joy Wolfram's Nanomedicine and Extracellular Vesicles lab in Florida part of Mayo Clinic is exploring organotropic drug delivery which is a new way to treat disease by targeting drugs at specific organs. The laboratory of Dr. Stephen Gould at Johns Hopkins investigates how EVs work, including how they develop and are taken up by neighboring cells. The lab also looks at how EVs affect cell-to-cell communication and polarity. This research also improves understanding of how retroviruses like HIV originate, because they originate in a similar way to exosomes and microvesicles.

A Wide Array of Clinical Applications

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