

Esco Ventures Announces the Launch of Carmine Therapeutics, a Company Pioneering Red Blood Cell (RBC)-Derived Extracellular Vesicle (EV)-Based Gene Therapies

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Carmine Therapeutics

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SINGAPORE, Aug. 28, 2019 /PRNewswire/ -- Esco Ventures is pleased to announce the launch of Carmine Therapeutics and execution of an exclusive license agreement for the technology developed in the laboratories of Professors Minh Le and Jiahai Shi at the City University of Hong Kong. Carmine Therapeutics plans to establish a site in Cambridge, MA and to expand in the US at the end of 2019.

Carmine Therapeutics is developing novel gene therapies that utilize extracellular vesicles (EVs) produced from red blood cells (RBCs). The foundational work behind this revolutionary platform was published in 2018 in Nature Communications 9:2359. RBCEVs are homogeneous, 150-nanometer vesicles that are also produced physiologically by RBCs as they age.

With Carmine Therapeutics' REGENT™ Platform – a proprietary RBCEV isolation, engineering and manufacturing platform, we are generating a pipeline of next generation gene therapies in the areas of hematology, oncology and immunology. Using our proprietary technology, RBCEVs can be loaded efficiently with nucleic acids up to 10 kilobases in size and they can deliver their payload efficiently both to cultured cells and to tissues and tumors *in vivo*. The powerful combination of a robust vector and a unique payload enables us to overcome key limitations of gene therapies in the clinic.

Carmine Therapeutics' scientific co-founders are world-renowned scientists and seasoned entrepreneurs. Professor Harvey Lodish is a Founding Member of The Whitehead Institute (MIT) and has founded several biotech companies including Genzyme, Millennium Pharmaceuticals and recently Rubius Therapeutics. Prof. Jiahai Shi is an Assistant Professor at

City University of Hong Kong (CityU) and the co-inventor of a red blood cell engineering technology that led to the founding of Rubius Therapeutics. Prof. Minh Le is an Assistant Professor at City University of Hong Kong(CityU) and is an expert in EV biology and oncology.

XQ Lin, CEO, a serial life science entrepreneur and investor, leads the management team of Carmine Therapeutics. XQ has created hundreds of millions in shareholder value and has global operating and product development experience and multiple patents.

Elan Ezickson has also joined Carmine's board of directors and brings a wealth of biotech industry experience with his involvement in various biotech companies including Tvardi Therapeutics, Ziopharm Oncology, Scholar Rock, Aveo Pharmaceuticals and Biogen.

"I'm excited about the many Carmine gene therapy technologies, especially the ability to direct these extracellular vesicles and the genes within them to cells and tissues that currently are very difficult to target." remarked Prof. Harvey Lodish, co-founder of Carmine Therapeutics.

To date, Carmine has raised US\$3.4M in seed funding, in an oversubscribed round led by Esco Ventures and joined by other investors.

SOURCE Carmine Therapeutics