

**MEDIA RELEASE**

**VivaZome Therapeutics Pty Ltd and ToolGen, Inc. extend collaboration agreement  
based on successful proof-of-concept outcomes**

**22 April 2020; Melbourne, Australia and Seoul, South Korea:** VivaZome Therapeutics Pty Ltd (“VivaZome”) and ToolGen, Inc (“ToolGen”) have announced the extension of a collaborative research project exploring the gene-editing of cells for enhanced exosome production.

Under the agreement, ToolGen is using its CRISPR/Cas9 technology to introduce gene edits into selected cell types with the aim of selectively altering the content and characteristics of exosomes produced by the cells. CRISPR/Cas9 technology allows scientists to insert or delete genetic material with high efficiency and fidelity.

Under the pilot study just completed, ToolGen undertook a knock-down gene editing, with the gene and the cell specified by VivaZome. The gene editing was successfully accomplished and exosome production by the edited cells was maintained at high levels.

Based on these successful outcomes, the next phase of the collaborative research will aim to create a gene-edited cell that could be used in VivaZome’s exosome manufacturing process. This work has the potential to create a novel cell line which is specifically and uniquely tailored to VivaZome’s manufacturing processes.

VivaZome’s Chief Executive Officer, Dr David Haylock, stated: “VivaZome is delighted to be extending the collaboration with ToolGen. Their gene-editing work to date has been excellent. This next phase will directly benefit VivaZome’s manufacturing process development and potentially provide the company with a strong proprietary position in the sector. VivaZome also acknowledges the support of the Department of Industry, Science, Energy and Resources through the CRC-P program in advancing our work.”

Director of ToolGen, Dr. Jae young Lee, added: “Our partnership with VivaZome has been successful and just under a year from the first agreement, we demonstrated a potential of exosomes produced from gene edited cells.”

CEO of ToolGen, Byong-Hwa Lee, commented: “We are proud to continue this collaboration, where we deliver advanced gene editing technology to create value and support to VivaZome’s exosome-mediated therapeutics for the benefit of people with disabilities.”

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#### About VivaZome Therapeutics Pty Ltd

VivaZome Therapeutics Pty Ltd (ABN 59 602 230 964) is a privately-held Australian biotech company, with headquarters at the La Trobe University Technology Enterprise Centre. VivaZome was formed to develop and commercialise exosome-based therapies for debilitating and/or life-threatening disorders, with an initial focus on critical limb ischaemia (CLI).

CLI is a debilitating disease caused by reduced blood flow, most often in the legs. It affects more than 4 million people worldwide, with an estimated treatment cost of over \$10B pa in the US alone. Existing treatments are largely surgical interventions including, in advanced disease, amputation. There is a huge need for new treatments, particularly pharmaceutical interventions to prevent or delay disease progression.

VivaZome is developing new technologies and generating intellectual property and proprietary materials that are applicable generically to exosome therapies. They will also underpin the Company's development of angiogenic exosomes for the treatment of CLI.

The VivaZome team has extensive expertise in the development and commercialisation of biological therapies, together with a wide network of expert contacts in the Australian and global biotech community.

For more information, please visit [www.vivazome.com](http://www.vivazome.com)

#### About Exosomes

Exosomes are small particles released by cells. They are a key effector in communication between cells and have the potential to become an off-the-shelf medicine without the technical problems of cell therapies. Currently exosomes are made at small scale – the VivaZome project aims to develop a large-scale, advanced manufacturing process for exosomes.

#### About ToolGen, Inc.

ToolGen, Inc. is a publicly traded biotechnology company focused on the development and application of genome editing technologies. It creates and holds intellectual property rights for essential tools and technologies for editing the genetic information in microbial, plant, animal, and human cells. ToolGen's mission is to translate the potential of our innovative platform technology into transformative products for biomedicine and agriculture.

For more information, please visit [www.toolgen.com](http://www.toolgen.com)