RepliCel™

NEWS RELEASE

Newly Released Peer-Reviewed Publication Further Validates RepliCel's Use of Dermal Sheath Cup Cells to Treat Pattern Baldness

VANCOUVER, BC – December 22, 2014 – RepliCel Life Sciences Inc. (OTCQB: REPCF) (TSX.V: RP), a clinical stage regenerative medicine company focused on the development of autologous cell therapies, announced today the publication of a paper out of the University of Calgary in conjunction with co-authors from Kyoto University and the University of North Carolina, which further validates the company's ongoing clinical research using dermal sheath cup (DSC) cells to reverse the effects of pattern baldness.

The paper entitled "*Hair Follicle Dermal Stem Cells Regenerate the Dermal Sheath, Repopulate the Dermal Papilla, and Modulate Hair Type*" published in the peer-reviewed journal Developmental Cell (*31*, 543-558, December 8, 2014) (http://dx.doi.org/10.1016/j.devcel.2014.10.022) summarizes research involving in vivo fate mapping done in an attempt to link hair loss to the roles and fate of various cell populations in and around the hair follicle.

The authors conclude that *"[t]he findings have direct implications toward understanding the pathological mechanisms that underlie such hair loss and identify an endogenous source of cells that may be targeted to restore DP* [dermal papilla] *numbers and reverse hair follicle growth arrest.*"

The study identified a 'bipotent stem cell' within the hair follicle tissue structure (a type of dermal sheath cell likely resident in the dermal cup) which the authors believe is responsible for generating new DP cells at the onset of each hair growth cycle and is directly linked to hair growth. Specifically, the paper states: "*Our data strongly supports this idea and shows definitively that new DP cells are sourced from self-renewing, bipotent hfDSCs* [hair follicle dermal sheath cells] *residing in the dermal cup.*"

It is this population of cells which is the subject of an extensive intellectual property portfolio held by RepliCel including a number of issued and pending patents. RepliCel's RCH-01 product in development for the treatment of pattern baldness has successfully completed phase 1 clinical testing for safety and is being prepared for a phase 2 clinical trial in 2015.

"Our team has reviewed the publication with great interest," stated RepliCel CEO, David Hall, "and we applaud the design of the research and its conclusions. It is credible validation of the science behind the cell population and technology covered by RepliCel's intellectual property based on our team's research and discoveries going back now over a decade. The authors concluded that a hair follicle dermal sheath cell which we describe as a dermal sheath cup cell has important implications toward restoration of hair growth after injury, disease, and aging."

About RCH-01 Treatment for Pattern Baldness

RCH-01 is an autologous cell therapy utilizing dermal sheath cup (DSC) cells isolated from the hair follicle to treat androgenetic alopecia. A phase 1 study was completed to assess the local (at treatment sites) safety profile of injections of the product at six months post-injection compared to placebo. The absence of any significant adverse events and preliminary signs of efficacy at a six-month interim analysis were sufficient to provide the company with the requisite safety information to begin preparing the regulatory filing for a Phase 2 clinical trial.

The phase 1 RCH-01 clinical trial, RepliCel's intellectual property portfolio, and the associated science behind both, were sufficient to motivate Shiseido Company (the fourth largest cosmetics company in the world) to enter into a collaboration and technology transfer agreement with RepliCel for its autologous dermal sheath cup cell technology for treating pattern baldness (RCH-01). The agreement gives Shiseido an exclusive geographic license for RCH-01 in certain Asian countries including Japan, China and South Korea. Shiseido and RepliCel will collaborate on the continued improvement of the technology and will conduct human clinical trials in each of their territories with the goal of commercializing a safe and effective hair regenerative treatment to help those suffering from pattern baldness and thinning hair. In addition to RepliCel's proposed phase 2 clinical trial in Germany for the treatment of androgenetic alopecia expected to launch in 2015, Shiseido also anticipates launching and funding a clinical trial in Japan in 2015.

RepliCel's proposed Phase 2 trial will enroll 160 male subjects in good health with mild to moderate androgenetic alopecia. DSC cells will be isolated from a small punch biopsy taken from the back of the subject's scalp. These cells will be replicated and then reintroduced into balding areas on the subject's scalp. After injections are performed, subjects will return to the clinic for assessment of total, terminal and vellus hair density and cumulative hair thickness, as well safety. Participants will remain in the trial for approximately 39 months.

About RepliCel
RepliCel is a regenerative medicine company focused on developing autologous cell therapies that address diseases caused by a deficit of healthy cells required for normal healing and function. The company's RCT-01, RCS-01, and RCH-01 cell therapies are designed to treat chronic tendinosis, damaged or aged skin, and pattern baldness. Shiseido has an exclusive license for RCH-01 in certain Asian countries including Japan, China and South Korea. All product candidates are based on RepliCel's innovative technology utilizing cell populations isolated from a patient's own healthy hair follicles. The company is also developing a propriety injection device optimized for the administration of its products and licensable for use with other dermatology applications. The Company's product pipeline is comprised of multiple clinical trials anticipated to launch through Q1 2015 in addition to Shiseido's own clinical trial of RCH-01 and the device in late prototype development. Visit www.replicel.com for additional information.

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This press release contains forward-looking information that involve various risks and uncertainties regarding future events, including statements regarding our approach and our technology, expected and planned upcoming milestones and events, and the timing of trials. Such forward-looking information can include without limitation statements based on current expectations involving a number of risks and uncertainties and are not guarantees of future performance of RepliCel. There are numerous risks and uncertainties that could cause actual results and RepliCel's plans and objectives to differ materially from those expressed in the forward-looking information, including: approval to conduct clinical trials; approval from the University of British Columbia's Clinical Ethics Review

Board; delays enrolling clinical trial participants; negative results from the Company's clinical trials; the effects of government regulation on the Company's business; risks associated with the Company's ability to obtain and protect rights to its intellectual property; risks and uncertainties associated with the Company's ability to raise additional capital; and other factors beyond the Company's control. Actual results and future events could differ materially from those anticipated in such information. These and all subsequent written and oral forward-looking information are based on estimates and opinions of management on the dates they are made and are expressly qualified in their entirety by this notice. Except as required by law, RepliCel does not intend to update these forward-looking statements.

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