Darwin IP Advisors LLC
strategic – tactical – evolutionary

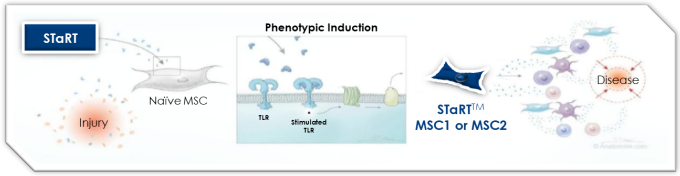
INTELLECTUAL PROPERTY OPPORTUNITY

commence bio

Offering: Acquisition or license of the Commence Bio, Inc., Patent Portfolio. Included are the ***STaRT***™ technologies and know-how used to manufacture *MSC1* and *MSC2* cell lines and their exosomes for clinical trials. The assignment of an agreement (with an annual fee and royalty payment structure) signed with an Animal Health licensee for rights to use *STaRT* and allogeneic MSC1/2 cells for canine indications is also included, as is know-how on an equine development project with another leading veterinary medicine firm.

Pricing Guidance: low-to-mid 6 figures

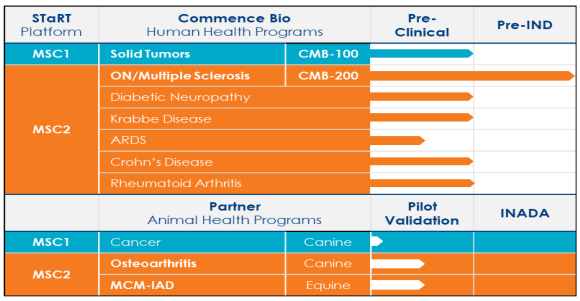
Technology Solution: Mesenchymal stromal cell [MSC] therapies have proven safe in the clinic (~30K patients), but not consistently effective. **S**timulated **T**oll-like **R**eceptor **T**echnology [***STaRT***] can be applied to naïve MSC cells to create a more potent anti-inflammatory *MSC2* phenotype (via the *STaRT32* System™) that improves clinical efficacy while retaining the safety and tolerability profile of naïve MSCs. Alternatively, *STaRT41*™ can be applied to create a breakthrough pro-inflammatory *MSC1* phenotype – a potential new cancer cell immunotherapy for solid tumors.



Applications:

Mesenchymal Stem Cell [MSC] Use	***STaRT41*-MSC1** | ***STaRT32*-MSC2** **Advantages and Opportunities**
Cell therapy	Incr. safety, quality and potency, decr. cost
Exosomes	Use MSC1/2 EVs as new, novel, therapeutics
Immuno-oncology	MSC1 therapy w/ increased tolerability/efficacy
Inflammatory Diseases	MSC2 incr. potency for a no. of indications
Animal Health	Enabling, low cost new therapies
Biofabrication	Use cells to build 3D bioprinted tissues
Research Tools	STaRT media for MSC1/2 research

Performance/MoA: MSC1/2 cells target diseased sites following IV administration and modulate innate and adaptive immune mechanisms via cell-to-cell contact and paracrine effects. Commence Bio and its partners/licensees used the *STaRT* technologies to demonstrate safety and efficacy in seven pre-clinical models of inflammatory diseases and cancer, as well as pilot programs in animal patients.



Overview of Licensed Patent Portfolio:

Patent Family #1: Novel stem-cell culture and therapy methods and culture medium compositions for inducing, activating, or priming discrete uniform cell phenotypes to selectively promote/suppress inflammation and immunity. Provides advantages over known culture media and methods by creating more uniform and predictable *ex-vivo* expanded and induced, primed, or activated populations of MSC stem cells. The initial research was conducted with grants from the NIH and DoD.

Patent Family #2: Provides novel culture medium compositions, stem-cell culture methods, and therapy methods for inducing, activating, or priming naive multipotent stem cells into discrete, multipotent, type 1 or type 2 cell phenotypes that selectively promote/suppress inflammation & immunity.

Patent Family	Representative Asset Number (Priority Info)	Underlying Claimed Technology	Status
Induction Medium and Methods for Stem Cell Culture and Therapy	US 9,321,994 (USSN 14/720,399 – ABD filed 1 Oct 14)	• MSC1 induction from any/all naïve MSC sources • MSC1 as therapy for cancers • MSC2 induction from any/all naïve MSC sources • MSC2 as therapy for inflammatory disease	• US 9,321,994 with foreign counterparts in AU, CA, CN, EP, JP, KR, MX, RU • US App 15/072,971
Medium, Methods, Cells and Secreted Factors for Stem Cell Culture and Therapy	PCT/US2017/025153 (US Prov. Appln 62/316,131 filed 31 Mar 2016)	• MSC1 & MSC2 exosome therapeutics • New MSC1 & MSC2 inducers	National Stage Entry due beginning in 30 Sep 18

Transferrable Programs for the underlying technologies pursued by an experienced scientific and management team include:

- Oncology: A pre-clinical program - with and without checkpoint inhibitors – in breast and colon cancer models has been designed with a leading CRO. This follows earlier work in an ovarian model wherein *MSC1* therapy attenuated tumor growth and metastasis with no adverse effects. Note that given *MSCs* have the ability to home to the tumor microenvironment, they may potentially have use in drug delivery and/or in combination therapies.

- Optic Neuritis/Multiple Sclerosis: A Phase I/II clinical study was designed to explore *MSC2* therapy benefits on long-term visual outcomes and/or delay the onset of MS.

- Animal Health: The *STaRT* technology can be applied to naïve MSCs from a number of tissue sources to treat cancers, atopic dermatitis, osteoarthritis, and more. Programs with two partners are in development, one of which includes a transferrable license agreement (NPV ~$1.5M).

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Contact Darwin IP Advisors to learn more about the current licenses and supporting know-how