Transforming Strong Medicines into First-Line Therapies

ARSTAT Inc. – Medicated Ring (Premring™)

Optimal Use of Selective Progesterone Receptor Modulators (SPRMs) for Uterine Fibroids and Endometriosis

Ultra-Low Doses Delivered Directly to Uterine Fibroids or Endometrial Implants

- ← *A strong therapeutic action at a fraction of an oral SPRM dose*
- ← *Safe long-term therapy (not an option for other hormonal meds)*
- ← *Each indication could generate > $1B/year in global markets*

Introduction:

- *We have developed and patented a transformational product which delivers a well-studied selective progesterone receptor modulator (SPRM) by a novel route (a vaginal ring).*
- *With a predictably stronger efficacy and better safety vs. existing hormonal medications, Premring™ could be a breakthrough solution for uterine fibroids and endometriosis.*

Our Innovation and Proprietary Position:

- *Targeted, controlled delivery of SPRMs was never applied to the treatment of uterine fibroids or endometriosis. Available data positions this option as an optimal use of the SPRMs*
- *Novel, proprietary combinations of SPRMs and drug delivery devices*
- *Novel: drug delivery directly to affected tissues for a stronger and faster therapeutic action*
- *Novel: the doses are much lower than those given orally*
- *2 PCT patent applications (developed with a top IP firm) are currently pursued in the US*
- *A 10-year protection of compositions is already secured in Germany*

Business Model:

- *Our business plan is to advance Premring™ up to completion of a Phase IIb study and to commercialize it in less than 3 years. We may also pursue an early out-licensing agreement.*
- *Premring™ could be developed by a dedicated start-up. As a potential breakthrough solution for serious disorders, Premring™ R&D could be suitable for an equity crowdfunding model.*
- *ARSTAT seeks funding from angel investor(s) to confirm the US and EU regulatory pathways and to support manufacturing and in-vitro testing of the prototype vaginal ring.*
- *The R&D costs and milestones, funding, business plan and exit details are disclosed below.*

Clinical Rationale:

- *SPRMs are very appealing, efficacious drugs for uterine fibroids and endometriosis.*
- *A major challenge: right oral dose. At low doses – insufficient reduction in size of fibroids and endometrial implants and inadequate symptomatic relief. At high doses – an increased risk of undesirable changes in endometrial lining of uterus, elevated liver enzymes and hot flashes.*
- *Solution: vaginal delivery of SPRMs directly to affected tissues via" first uterine pass effect"; a maximum impact on progesterone receptors, endometrial proliferation, and targeted cells*
- *Robust preclinical and clinical data supports recommended daily drug delivery doses*
- *A targeted delivery greatly reduces drug levels in systemic circulation – fewer side effects*
- *Improved safety permit a long-term therapy (not an option for oral SPRMs, GnRHa, and androgens), reducing the need for hysterectomy in women of late reproductive years*

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Development and Commercial Details:

- *Same drug/device combination and a comparable (if not the same) dose for both indications*
- *Prototype vaginal rings were developed (for another indication) and successfully tested.*
- *Strong supporting data – a low-risk program; a 505(b)(2) NDA; 5-5.5 years to market*
- *Some studies (e.g., in vitro drug release; local irritation) will support both indications; a Phase IIb study for uterine fibroids could serve as a further proof of concept for endometriosis.*

Potential Blockbusters; Great Exit Opportunities for Venture Capital:

- *Millions need treatment: >20M with symptomatic fibroids, 7.5M with endometriosis (US)*
- *A potential first-line therapy in areas of significant unmet medical need*
- *With conservative assumptions, each indication could generate over $1B/year (US and EU)*
- *Validated by published projections for an inferior R&D candidate ($1.75B/year per indication)*
- *Earliest exit in 2 years (after Phase IIb); Excellent returns after the US & EU approvals of both*

Business Plan:

- *Over the next 12-15 months, the following milestones will be achieved:*
  - *A meeting with the FDA will confirm the regulatory pathway for at least one indication (uterine fibroids); major features of the endometriosis program could also be discussed.*
  - *A prototype vaginal ring will be manufactured; in-vitro testing will be performed.*
  - *Meetings with Health Authorities to confirm the clinical program for major EU markets*
  - *Following the meetings with regulators, a US IND and, possibly, EU CTA will be filed.*
  - *Ready to start a local effects study, if such a study is required by the FDA*
- *Accomplishment of these tasks is expected to secure a licensing agreement or a Series B round of financing which would be applied toward the completion of the 1st efficacy (Phase IIb) study*

Value Proposition:

- *To support Premring's R&D, the company seeks to raise $600-700K from angel investor(s).*
- *In 12-15 months, Premring's valuation will increase at least 6-fold, bringing it up to $12M.*
- *In 3-4 years, we will offer the investors an opportunity for exit or to continue with their support. The anticipated return could be 12-14x.*

R&D Costs, Major Milestones, Projected Sales and VC Exits: Overview:

End of Year 2	End of Year 4	Years 5-5.5	Projected Annual Sales:
Phase IIb Completed ("UF") It also supports "EN"	US and EU submissions ("UF"); Start of Phase III ("EN")	US Approvals ("UF","EN") EU Approvals ("UF","EN")	$1.2B (AR-1) $1.16B (AR-2) US & EU Markets
Costs: ≈$12M Exit: ≈$50-60M	Costs: ≈$42M Exit: ≈$150-200M	Costs: ≈$54M Exit: ≈$600-700M	

Cost for each indication is < $30M. Maximum value if both indications are pursued.

"UF" – Uterine Fibroids; "EN" - Endometriosis

Costs = Cumulative R&D costs ($54M are the total R&D costs for both indications);
Exit = Upfront payments to all shareholders (royalties are also expected).

The Company's Background: *The ARSTAT's principal is Arkady Rubin, a PhD-level researcher with 20+ years of pharma industry experience, mostly in women's health. In the area of non-oral drug delivery, he co-authored multiple publications. Dr. Rubin was also a co-inventor of Ortho Tri-Cyclen Lo®, the best-selling oral contraceptive in the US (>$450M in 2013).*