Microdermics provides precision access to the skin, enabling on-demand insight into key metabolic information, for health conscious users and those with chronic conditions.
UNLOCKING THE POTENTIAL OF SKIN

The What
- Painless monitoring of analytes, like glucose, remains elusive.
- Microdermics’ proprietary *microsensor* is painless, accurate, readily adaptable to most types of biosensors, scalable, and promotes multi-analyte monitoring.
- Technology simultaneously supports painless intradermal **drug delivery**.

The Status
- Sensing: Successful tests for mechanical/membrane robustness, long-term wearability, multi-analyte sensing
- Delivery: Successful clinical trial, human safety study, and preclinical studies
- Manufacturing: prototypes available, ready for scale-up

The Ask
- Microdermics is seeking strategic M&A opportunities or technology out-licensing.
- Novateur are here to help manage this process.
THE NEED

- Patients demand biosensors that are painless, accurate and self-calibrating.
- Major analyte monitoring companies are aggressively pursuing innovation to maintain a competitive advantage.
- Biosensor market will reach USD 21B in 2019, driven mainly by glucose monitoring.
- Patients also demand drug administration that is painless, accurate and effective, but conventional drug delivery methods are focused on subcutaneous layer of skin.
Microdermics’ microsensor and drug delivery platform enables leading strategic partners to achieve a superior user experience.

**THE SOLUTION**

- **No pain for drug delivery**
  - Painless microneedle application

- **Promotes multi-analyte monitoring**
  - Customized array of microsensors

- **Scalable**
  - High-yield manufacturing that achieves cost targets

- **Less warm-up time**
  - Reduced tissue damage

- **Superior accuracy**
  - Extends into highly vascular dermis
ACTIVE HEALTH MONITORING
Minimally-invasive approach to unlock continuous biochemical data for clinically relevant insights.

INTEGRATED DISEASE MANAGEMENT
Our platform can generate new insights for disease management.

INTRADERMAL DRUG DELIVERY
Precise and easy injection to the intradermal space for enhanced pharmacokinetics and patient experience.
**MULTI-ANALYTE MONITORING**

- **Glucose**
  - Mx Microneedle
  - Actual Glucose Level
  - Standard Glucose Meter

- **Lactate**
  - Mx Microneedle
  - Actual Lactase Conc.
  - Standard Lactate Meter

- **Potassium**
  - Microdermics
  - Cole Parmer

- **Sodium**
  - Microdermics
  - Cole Parmer

- **Creatinine**
  - Microdermics Measurements

- **Microdermics Measurements**

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- **Microdermics**
  - Microdermics
  - Cole Parmer
INTEGRATION WITH EXISTING BIOSENSOR TECHNOLOGY
### MONITORING: COMPETITIVE LANDSCAPE

<table>
<thead>
<tr>
<th>Feature</th>
<th>biolinq</th>
<th>Sanoh</th>
<th>Graphwear</th>
<th>Abbott</th>
<th>Medtronic</th>
<th>DEXCOM</th>
<th>Optical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painless</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
</tr>
<tr>
<td>Universally compatible</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
</tr>
<tr>
<td>Multi-analyte</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
</tr>
<tr>
<td>Highly accurate</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
</tr>
</tbody>
</table>

Silicon MNs

Sweat Patch

Optical SubQ CGMs
Skin is rich, but hard to access

- Capillary and lymphatic vessels provide rapid drainage
- Rich in immunogenic cells

Intradermal drug delivery

- Precise and easy injection to the intradermal space
- Enhanced pharmacokinetics and patient experience
## DRUG DELIVERY: COMPETITIVE LANDSCAPE

<table>
<thead>
<tr>
<th>Feature</th>
<th>Other Microneedles</th>
<th>Jet Injectors</th>
<th>Transdermal Patches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precise &amp; easy access to the skin</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
</tr>
<tr>
<td>Flexible for existing and new applications</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
</tr>
<tr>
<td>No need to reformulate API</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
</tr>
<tr>
<td>Cost-effective at scale</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
</tr>
<tr>
<td>Broad formulation capabilities (high volume, high viscosity, faster injections)</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
</tr>
</tbody>
</table>
COMPREHENSIVE PATENT PROTECTION  
(SENSING, DRUG DELIVERY, MANUFACTURING)

- **Family I** – Metallic Microneedles  
  ○ Covers fabrication of metallic microneedles  
  ○ Issued in US (3x), Hong Kong, Japan, Taiwan, China, Canada  
  ○ Pending in Europe, India, Korea, China (divisional), Japan (divisional)

- **Family II** – Microneedle Support Structures  
  ○ Covers design for microneedle supporting and skin imprinting structures  
  ○ Pending in Europe, Canada, US

- **Family III** – Methods and Apparatus for Microneedle Insertion into Tissue  
  ○ Covers applicator designs and skin insertion mechanisms  
  ○ Pending in US, Canada

- **Family IV** – Microneedle-based Sensing  
  ○ Covers integrated microsensor design and assembly methodologies  
  ○ Pending PCT application
MARKET OPPORTUNITY

• Global biosensor market expected to be worth $36B by 2027, CAGR: 7.9% (Grand Review Research, March 2020)

• Controlled release drug delivery market expected to be worth $40B by 2027, CAGR: 7.8% (Grand Review Research, March 2020)

• Electronic drug delivery market expected to be worth $14.5B by 2027, CAGR: 8.5% (P&T Community Research, June 2020)
MICRODERMICS TEAM

Boris Stoeber, PhD
Acting CEO

Lana Janes, PhD
Board Member

Todd Farrell
Board Member

Ali Ardakani
Strategic Corporate Advisor

Ray Chan
Executive Chairman

Francis Duhay, MD, MBA
Board Member

David Kobayashi
Project Manager

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