

## LETTER TO SHAREHOLDERS

APRIL 2017

ASX: MDC

Dear Shareholder,

Over the past three months Medlab has recorded a number of significant achievements. In an update on business progress, Medlab CEO, Sean Hall, presented at an investment conference hosted by Morgan Stanley on 30 March 2017, with key points set out below.

### **Cannabis for Advanced Cancer Pain trial - NanaBis™**

- Discussion with the Ethics Committee at Royal North Shore Hospital is ongoing
- All other things are in place - cannabis supply, licence, and a special scheduled drug manufacturer ready to start production when trial approval comes through
- After the trial, there is potential for rapid market entry for a new prescription drug in place of opioids
- We expect the trial to show significant improvement in patients undergoing opioid therapy due to:
  - the unique blend of CBD and THC, the active ingredients in cannabis
  - superior concentrations of these active ingredients
  - administration of the medicine through Medlab's novel, patent pending delivery platform, NanoCelle™, which improves speed of absorption into the bloodstream

### **Depression study - NRGBiotic™**

- Ethics approval has been received for the Phase 2a trial of our patented probiotic, NRGBiotic™
- In two Phase I trials, NRGBiotic™, combined with standard depression medication, achieves a better outcome than the standard treatment alone
- Phase 2a trial will recruit 130 patients.

### **Cardiovascular drugs (statins) - NanoStat™**

- Statin drugs have been shown to have poor absorption, with it also reported approximately one-third of patients suffer side effects, principally pain
- Medlab's has commissioned an independent skilled laboratory to do human studies (BioEquivalence) comparing the most popular statin pill (Atorvastatin, branded as Lipitor) against NanoCelle™ delivered statins
- We expect the study to show NanoStat™ achieving faster absorption of statins into the bloodstream, allowing a smaller dose and consequently, less side effects than Lipitor

### **Nutritional business**

- Revenue growth continues, with new products to come
- New ways of marketing and selling are being considered

You can read Sean Hall's 30 March presentation on the [www.ASX.com.au](http://www.ASX.com.au) or on [www.medlab.co/investor](http://www.medlab.co/investor) and a summary of slides is on the following pages.

## MORGAN STANLEY PRESENTATION, SLIDES SUMMARY

Medlab is a medical life-science company addressing high volume, unmet patient needs. There are currently five activity **highlights** around its business:

1. **NANOCELLE™ CANNABIS (NANABIS™) Patent pending, opioid alternative for advanced cancer pain** – In HREC (ethics), for what is potentially one of the most significant trials of its kind.
2. **NANOCELLE™ ATORVASTATIN (NANOSTAT™) Patent pending, nanoparticle statin** - Successful and repeatable outcomes have been achieved in our 5mg trial. Zenith agreement signed, Bioequivalent studies to commence soon.
3. **DEPRESSION Patent pending bacterial medicine supporting gut/brain axis**– Significant outcomes with completion of two phase I clinical trials using Medlab's NRGBiotic™ (in market). **Phase 2A HREC APPROVED.**
4. **DIABETES & OBESITY Patent pending bacterial medicine supporting glucose metabolism** – Significant outcomes with completion of initial human trials using new product developed from Medlab's MultiBiotic™ (in market), validated write up underway, trial progression planned.
5. **NUTRACEUTICAL SALES:**
  - H1 2017 Sales achieved strong growth over H1 2016
  - December 2016 quarter achieved growth of 28% over the September 2016 quarter
  - Advanced stages of potential JV discussions for a "fighting" brand in retail Pharmacy, allowing Medlab to leverage sales from both back of store (traditional business) and front of store.

Medlab's **business model** is to undertake pioneering research, seek shorter timelines in commercialising this research by exiting after Phase 2a human trials and contribute to funding operations with cash flow from sales of nutritional products.

As Medlab approaches commencement of its human trial of **NanoCelle™ Cannabis** for advanced cancer pain, two surrounding issues are worth noting – opioids have become standard therapy for treating pain and globally, cancer pain is widespread, undertreated and rated as moderate or severe.

### Opioids are Standard Therapy



**"OPIOID NATION"**

About 42 million packs of opioids are sold per year in Australia, including 27 million packs of prescription opioids and 15 million packs of OTC opioids."

(Australian Doctor Feb 2017)

9

### Cannabis Research – Cancer Pain

A recent (2007) global meta analysis the pooled data from 52 studies that met pre defined quality standards showed that pain was prevalent in cancer patients:

- 64% in patients with metastatic or advanced stage disease.
- 59% in patients on anticancer treatment.
- 33% in patients after curative treatment.

**More than one-third of the patients with pain in the reviewed studies graded their pain as moderate or severe.**

*"Nearly one of two patients with cancer pain is undertreated."*

Reference:  
Fischl M, Chabalod C et al. Prospective, Observational Study of Pain and Analgesic Prescribing in Medical Oncology Outpatients With Breast, Colorectal, Lung, or Prostate Cancer. Journal of Clinical Oncology. Vol 36. Number 16. June 1, 2012.  
van den Broek-van Eerdingen MPJ, de Rijke JM, Kessels AG, Schouten HC, van Kiefl M, Patijn J. 2007. Prevalence of pain in patients with cancer: a systematic review of the past 40 years. Ann Oncol 18(3): 1437-1449.


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Medlab's formulation of its cancer therapy combines a ratio of the two most active cannabis compounds and its administration with NanoCelle™ will achieve faster absorption into the bloodstream.

Medlab's work on statins has the potential to tap into a significant global market, especially as the market leading drug is off-patent.

Medlab's research has shown administration of statins with NanoCelle™ means absorption into the bloodstream in less than a minute and that since a lower dose is required, there is potential to reduce side effects. The impending start of a trial to confirm this research has attracted early interest from several multi-national pharma firms.

## Atorvastatin - Market Potential




- Statins market worldwide, predominantly tablets, forecasted at US\$12 billion in 2018
- Market size declining in recent years because statins going off-patent but still big
- In US, 73.5 million adults have high LDL cholesterol, with 26% of adults using statins in 2012
- Globally, raised cholesterol levels are estimated to cause 2.6 million deaths each year, according to the World Health Organization.

Approximately one third of patients report unwanted side effects associated with statin use: pain

References:  
<http://www.prweb.com/releases/2018/04/0411603378.html>  
<http://pubs.acs.org/doi/10.1021/acs.jmedchem.7b00001>  
<http://edition.cnn.com/2016/09/08/health/study-explains-pros-and-cons-of-statin/>

18  
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## Other NanoCelle™ Active Pharmaceutical Ingredients



**Some 23 API's in prototype**

- Insulin
- Testosterone
- Antibiotic
- Progesterone
- Immunosuppressives
- Proton Pump Inhibitors
- Angiotensin Converting Enzyme inhibitor

COVERS MOST MAJOR DRUG CLASSES

DEMONSTRATES PORTABILITY OF NANOCELLE™ AS A DELIVERY PLATFORM

ALLOWS FOR MULTIPLE COMMERCIALISATION OPPORTUNITIES


PATENT STRENGTHENED & PUBLISHED USA PATENT TRADEMARK OFFICE SEPT 2016

21  
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Success with initial trialling of NanoCelle™ in this way has also opened the potential for application with other **active pharmaceutical ingredients**. Medlab currently has 23 of these in prototype.

The widespread nature of **depression** means a potentially large market for Medlab's NRGBiotic™ which is being used in human trials with standard anti-depressant medication.

## Depression Market Size




**World Health Organisation**

- By 2030, depression will be **highest level of disability** of any physical or mental disorder
- **350 million people worldwide**, 5% world population, suffer from depression

**United States**

- In 2012, **16 million adults** had at least one major depressive episode



References:  
<https://www.who.int/news-room/fact-sheets/detail/depression>  
<http://www.healthline.com/health/depression/facts-statistics-info-graphic/>

23  
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## Depression Market Size - Australia



- **Government spent \$564 million**, or \$24 per person, on **subsidised prescriptions** in 2015–16, equating to 5.0% of all PBS/RPBS subsidies
- Prescription for antipsychotics (49.6%) and **antidepressants (36.5%)** accounted for the majority of mental health-related PBS and RPBS expenditure during this time period.



References:  
<https://mhaa.althea.gov.au/resources/penditure>  
<http://www.healthcare.com/health/depression/facts-statistics-infographic/>

24

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Participants in the trials have been using this standard medication for at least two and a half years and results from two Phase 1 trials have been positive, showing a reduction in depression symptoms.

The effect of NRGBiotic™ is to prepare the body to achieve better absorption of medicine while also targeting the brain-body axis to achieve better functioning. A phase 2a study has now received hospital ethics committee approval, allowing recruitment for the trial to commence.

Medlab's work in the area of **diabetes and obesity** is also in the context of a global health issue with significant market potential.

Results from a Phase I clinical trial in collaboration with The Boden Institute at the University of Sydney Medical School have shown a reduction in insulin markers. The trials have used Medlab's MultiBiotic™, which has been patented for fatty liver disease and have highlighted its potential for pre-diabetic and type 2 diabetic patients.

## Diabetes Potential Market



- **Over 25 million people have diabetes in the US**
- In 2012, **86 million Americans age 20 and older had prediabetes**; this is up from 79 million in 2010.
- **Australia estimates 1.7 Million diabetes patients**
- A leading medical report in 2012 reports non-adherence rate of 35% to diabetic medication



29

Medlab's intellectual property portfolio is strong, with 14 patents for its products, and it currently has 24 products in its nutraceutical range, with more in development.

As it looks to the future, Medlab is focused on research, commercialisation and growth across five key areas:

1. Progressing **research** programmes
2. Bringing **NanaBis™** (NanoCelle™ Cannabis) **to the AU market.**
3. Bringing **NanoStat™** (NanoCelle™ Atorvastatin) **to the AU market.**
4. Growth in the **nutraceutical** business (*possible JV for "retail" brand*)
5. Development of **trade agreements** with interested third parties, several already in discussion for Pharmaceutical and nutraceutical.

Thank you for your ongoing support.

Sean Hall  
CEO

Michael Hall  
Chairman

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About Medlab [www.medlab.co](http://www.medlab.co)