

# BioProspect acquires breakthrough diagnostic tool for mental illness

- BioProspect acquires Invatec/Heartlink's Diagnostic Heart Rate Variability (HRV) technology.
- Due Diligence confirms Invatec's HRV technology is ground breaking and has the potential to revolutionise mental health diagnosis.

**Sydney, Australia, 14 April 2014**. BioProspect Limited (ASX: BPO) today announced that it will proceed with the acquisition of Invatec/Heartlinks Heart Rate Variability (HRV) technology following the completion of a highly favourable due diligence exercise. The HRV technology, which analyses the heart rate variability of the patient, is the worlds first truly objective quantitative test for mental health, including depression.

The board of BioProspect has exercised both options to acquire an initial interest in Invatec and to licence the Heartlink technology, which together comprise the ground-breaking HRV technology. BPO will initially acquire 35% of Invatec and a worldwide license to the HRV technology by funding the future development of the technology. Once this is complete, BPO may exercise a further option to fully acquire the entire patent portfolio of Heartlink and to increase its stake in Invatec to 80%.

Peter May, Chairman of BioProspect, commented:

We are tremendously excited by the potential of this revolutionary technology and we look forward to working with Invatec to commercialise what promises to be the worldon first quantitative, evidence-based tool for diagnosing mental health disorders.+

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### **About BioProspect**

BioProspect (ASX: BPO) is a biomedical technology company developing a new paradigm in psychiatric diagnosis based on Heart Rate Variability (HRV) technology that utilises human heart rate characteristics, including certain tell-tale changes, as sensitive measures for depression. The HRV technology will consist of a heart monitor that sends recordings wirelessly to the internet where a proprietary algorithm analyses and delivers a quantifiable score for depressive illness. The HRV Technology is the first objective, evidence based approach to the diagnosis of depression and other affective disorders. The technology has already benefited from 10 years of research and BioProspect is currently supporting Invatec in undertaking a number of pivotal trials to further validate the technology clinical utility. Located in Sydney, New South Wales, BioProspect is listed on the Australian Stock Exchange.

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#### Notes for editors:

# **Summary of Key Due Diligence Findings:**

The Due Diligence undertaken by BPO involved a rigorous process to review both the technology and associated Intellectual Property. This was conducted by external consultants including a team of University-based Research Psychologists, a Consultant Psychiatrist, and Patent specialists. The key findings of Due Diligence support BPOs view that:

- The technology has been in development for 10 years involving over 6,000 test cases;
- A successful diagnosis rate in excess of 80% in comparison to clinician diagnoses in a blinded test of 98 patients conducted as part of Due Diligence;
- The technology has the potential to be used as a diagnostic tool for a wide range of mental health disorders;
- No single competing evidence-based test for a wide range of mental health disorders currently exists; and
- The technology is protected by a suite of patents.

## **University Research Team Due Diligence**

The University Research team included a number of Research Psychologists and was led by a Research Psychologist with a PhD specialising in depression. A detailed literature review was undertaken to evaluate similar or competing technologies, other potential biomarkers of depression, and other analyses of heart rate variability in psychopathologies. The key findings were that:

- Historical research tends to support the possibility of Heart Rate Variability (HRV) as a biomarker for Depression and other forms mental illness;
- The majority of prior research on Heart Rate Variability (HRV) focussed on much shorter 5 minute intervals, while Invatec has focussed on longer periods of monitoring; and
- Longer HRV measurement may have the potential to be used as a diagnostic tool in psychopathologies in at-risk patients.

### **Independent Consultant Psychiatrist Due Diligence**

BPO retained an independent Consultant Psychiatrist who is Head of Psychiatry at one of Perths largest Private Hospitals as part of its Due Diligence. The scope was to provide confirmation that Invatecs clinical investigations have been undertaken and an opinion as to whether or not there is evidence that would support the basis of the technology and the likelihood of it being applicable to the broader population. The key findings of this report were:

- Confirmation that Invatec has undertaken systematic clinical investigations conducted over an extended period and that the standard of work is at an acceptable level and comparable to a typical investigator initiated clinical study;
- Confirmation that the overall outcome of the clinical studies is a consistent finding in favour of diagnostic value in the circadian heart rate data;
- Confirmation that the numbers of participants in the Invatec Clinical research program are sufficiently
  large and composed of real life clinical cases submitted by competent and experienced clinicians to
  be statistically significant confirmation it highly likely that the research findings are generalizable to a
  broader population;
- Confirmation that that there appears to be a statistically high probability that heart rate does indeed have diagnostic potential in the field of mental health disorders; and
- Confirmation Invatec research rests on the good foundation of the well-established existing body of international peer reviewed scientific publications.



# **Patents**

Patent Specialists have confirmed the status of patents in the patent portfolio owned by Heartlink Limited covering the Heart Rate Variability (HRV) technology. These patents in respect of the invention entitled *Method for diagnosing psychiatric disorders+*, are shown in the Table 1. BPO intends to expand the patent portfolio covering the technology as a matter of priority.

Table 1 -Heartlink Patent Coverage

Country	Patent Number	Status	Next action	Expiry Date
Australia	720226	Granted	Renewal due	14 Apr 2018
Israel	132186	Granted	Renewal due	14 Apr 2018
New Zealand	337833	Granted	Due to expire	14 Apr 2018