

NEW DATA LINKS TUMOUR DESTRUCTION USING PHOTOSOFF™ TECHNOLOGY WITH SECONDARY IMMUNE RESPONSES

- **New preliminary data looking at different T-cells in mice suggest that tumour ablation using Photosoff™ technology may trigger the body's natural immune response**
- **Pre-clinical results suggest that Photosoff™ can affect tumours by directly killing tumour tissue, leading to activation of the body's immune system**
- **An increased ratio of Teff-to-Treg cells observed in Photosoff™ treated mice in an ovarian cancer model parallels similar changes typically associated with improved survival and treatment outcomes in ovarian cancer patients**
- **Earlier results showed Photosoff™ shrunk ovarian cancer tumour in a mouse model by over 50% in three weeks**

MELBOURNE (AUSTRALIA) 15 April 2020: Invion Limited (ASX: IVX) ("Invion" or "Company") is pleased to provide additional data obtained from its research partner, Hudson Institute of Medical Research, further to the primary results of the pre-clinical study which were released on 27 November 2019.

The additional preliminary data from the ovarian cancer mouse model supports the view that, following direct Photosoff™-mediated tumour tissue destruction, a further outcome of treatment is the initiation of an anti-tumour immune response.

Researchers at Hudson Institute looked at the T-cells in Photosoff™-treated mice and in a control group of untreated mice for evidence of an immune response.

T-cells and the immune system

T-cells are a type of white blood cell that help regulate the body's immune response to specific pathogens. There are two major types of T-cells.

"Effector" cells, or Teff cells, defend the body against pathogens during an immune response.

"Regulatory" T-cells, or Treg cells, suppress the immune response.

The suppression of the immune response is often desirable so as to 'switch off' immune responses once a pathogen has been eradicated.

However, having too many Treg cells in cancer patients can affect the ability of their immune systems to fight cancer.

T-cell ratio is an important prognostic indicator

The additional data show that on day two of the study, mice treated with the Photosoff™ technology had significantly greater numbers of tumour-infiltrating T-cells than the control groups.

On day 22, researchers found that whilst T-cell numbers in tumour tissues had returned to baseline, Photosoff™ treated tumours contained significantly fewer immune-suppressive Tregs than the control group.

For personal use only

ASX ANNOUNCEMENT

"For ovarian cancer patients, the ratio of Teff-to-Treg cells is an important prognostic indicator," said Dr Andrew Stephens, head of Ovarian Cancer Biomarker Laboratory at Hudson Institute.

"A relative reduction of Treg cells compared to Teff cells in the tumour tissue generally correlates with longer survival and better treatment outcomes.

"Based on these early findings, it appears that tumour shrinkage using Photosoft™ technology is accompanied by a potentially beneficial change in the immune microenvironment in ovarian tumour tissue."

Pre-clinical study details

The studies were undertaken in a syngeneic primary ovarian cancer mouse model as established and previously used in pre-clinical studies at Hudson Institute. The presence of ovarian cancer in the mice was confirmed prior to use in the study.

Twenty-eight mice with primary ovarian tumours were used in the immune study. Statistical analysis was undertaken and the study included appropriate controls involving no treatment of a control group of the ovarian cancer mice.

Next steps

Hudson Institute is undertaking further research with an aim of more conclusively understanding the impact of Photosoft™ technology on the immune response. Pre-clinical results released in November 2019 demonstrated that Photosoft™ shrunk the size of ovarian cancer model tumours in mice by over 50% in three weeks.

Craig Newton, Chief Executive Officer of Invion, said: "That Photosoft™ technology may be able to attack the cancer in two ways – directly and by activating the body's immunity – is significant because most common cancer treatments, such as chemotherapy, suppress the body's natural ability to fight pathogens.

"These results from Hudson Institute give us hope that the Photosoft™ technology may have a similar effect on other types of cancers. This will be an area we will look closely at when we commence human trials using the Photosoft™ technology to treat skin cancer later this year."

Investor enquiries

Managing Director & CEO, Craig Newton
T: +61 3 9081 6005
E: investor@inviongroup.com

Media enquiries

Brendon Lau
T: +61 409 341 613
E: brendon@vantagepointpartners.com.au

About Invion

Invion is a life-science company that is leading the global research and development of Photosoft™ technology for the treatment of a range of cancers. Invion holds the Australia and New Zealand license rights to the Photosoft™ technology. Research and clinical trials are

For personal use only

ASX ANNOUNCEMENT

funded by the technology licensor, RMW Cho Group Limited, via an R&D services agreement with the Company. Invion is listed on ASX (ASX:IVX). This announcement was approved for release by Craig Newton, MD & CEO. For further information please contact investor@inviongroup.com.

About Hudson Institute of Medical Research

Hudson Institute is a leading Australian medical research institute recognised internationally for discovery science and translational research into cancer, inflammation, reproductive health and pregnancy and infant and child health.

Our 475 scientists study human health and disease at a molecular and cellular level to discover how biological systems work and how disease and disability can be prevented or treated. Our close ties with clinicians and industry give us the ability to translate our discoveries into new preventative approaches, therapies and devices for patients.

We are a founding member of the Monash Health Translation Precinct with partners Monash Health and Monash University. Our integrated research teams include clinicians, nurses and clinical trial coordinators who both inform research programs based on patient need and advance these discoveries back to the clinic.

Working alongside clinicians in Melbourne hospitals for more than 50 years, Hudson Institute scientists pioneered IVF and stem cell discoveries and are now leading developments in paediatric cancer and the human microbiome. Our worldwide scientific and medical collaborations provide a foundation for transformative healthcare programs across the globe.

About Photodynamic Therapy (PDT)

Invion is developing Photosoft™ Technology as an improved next generation Photodynamic Therapy. PDT uses non-toxic photosensitisers and visible light in combination with oxygen to produce cytotoxic-reactive oxygen that kills malignant cells, shuts down tumours and stimulates the immune system. A potential alternative to surgery, and in contrast to radiotherapy and chemotherapy which are mostly immunosuppressive, PDT causes acute inflammation, expression of heat-shock proteins, and invasion and infiltration of a tumour by leukocytes.

For personal use only