

## INVION CONFERENCE PRESENTATION

**MELBOURNE (AUSTRALIA) 27 October 2022:** Invion Limited (ASX: IVX) (“Invion” or the “Company”) will be presenting at AusBioInvest 2022 in Perth today.

Invion's Executive Chairman and Chief Executive Officer, Thian Chew, will be using the attached presentation at the conference.

This announcement was approved for release by Thian Chew, Chairman of the Board.

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### Investor and Media enquiries:

Thian Chew (Chairman & CEO)

T: +61 3 9692 7222

E: [investor@inviongroup.com](mailto:investor@inviongroup.com)

Brendon Lau (Investor & Media Relations)

M: +61 409 341 613

E: [brendon.lau@inviongroup.com](mailto:brendon.lau@inviongroup.com)

### About Invion

Invion is a life-science company that is leading the global research and development of the Photosoft™ technology for the treatment of a range of cancers, atherosclerosis and infectious diseases. Invion holds the exclusive Australia and New Zealand license rights and exclusive distribution rights to Asia Pacific excluding China (other than Hong Kong, which is included in the Territory), Macau, Taiwan, Japan and South Korea to the Photosoft™ technology for all cancer indications. It also holds the exclusive rights to the technology in Asia Pacific (excluding Greater China) for atherosclerosis and infectious diseases. Research and clinical cancer trials are funded by the technology licensor, RMW Cho Group Limited, via an R&D services agreement with the Company. Invion is listed on the ASX (ASX: IVX). For more information, visit [www.inviongroup.com](http://www.inviongroup.com).

### About Photodynamic Therapy (PDT)

Invion is developing Photosoft™ technology as a novel next generation Photodynamic Therapy (PDT). PDT uses non-toxic photosensitisers and light to selectively kill cancer cells and promote an anti-cancer immune response. Less invasive than surgery and with minimal side effects, PDT offers an alternative treatment option aimed at achieving complete tumour regression and long-lasting remission.

# AUSBIOINVEST 2022 PRESENTATION

October 2022

**INVION**<sup>™</sup>



# DISCLAIMER

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# COMPANY OVERVIEW

## DEVELOPING THE NEXT-GEN PHOTODYNAMIC THERAPY (PDT)



### Meeting Clinical Needs

- Major disease areas: Cancer + atherosclerosis and infectious diseases (AID)
- Advancing Photosoft™ technology – novel PDT photosensitiser INV043
- Collaboration with world-class expertise (Hudson Institute, Peter Mac)



### Demonstrated Cancer Efficacy, Protective Immunity

- Regression of established tumours across multiple cancer types
- Immune response, protective immunity
- Improves efficacy of immune checkpoint inhibitor (ICI) treatments when used in combination therapies
- Strong therapeutic profile: Non-toxic at 100x therapeutic dose



### Multiple Cancers, Future Potential

- Clinical stage cancer program
- Multiple cancer indications in Asia Pacific Territories<sup>2</sup>
- Expanded Disease Areas: Atherosclerosis and Infectious Diseases (AID)
- Promising *in vitro* results: Multiple viruses and strains (Zika, SARS-CoV-2 Delta and Omicron)



### Sources of Value Creation

- Clinical trials across multiple cancer indications in 2023 and beyond
- Core clinical development funded by RMWC, inventor/ owner of Photosoft™
- Expansion of Territories in AID<sup>1</sup> and cancer<sup>2</sup>
- Potential to partner

<sup>1</sup> Includes Asia and Oceania (other than Australia and New Zealand, which are covered under a pre-existing distribution and licence agreement with RMW), and excludes Middle East, Russia and the specified territories of China, Hong Kong, Macau and Taiwan.

<sup>2</sup> Includes all Asia Pacific countries excluding China (other than Hong Kong, which is included in the Territory), Macau, Taiwan, Japan and South Korea. Invion's rights with respect to development and distribution of Photosoft™ technology in Australia and New Zealand will continue to be covered under the pre-existing agreements with RMW. Closing of transaction subject to shareholder approval.

# THE PHOTOSOFT™ ADVANTAGE

## A NOVEL CANCER TREATMENT



NGPDT (Next-Gen PDT) is a ground-breaking technology that overcomes many of the shortcomings of early PDT technologies and aims to transform the treatment of a wide range of cancers



NGPDT is a minimally invasive modality for treating cancer that specifically identifies and destroys cancer cells whilst leaving the rest of the body's normal cells unharmed

**Photodynamic Therapy (PDT)** consists of three elements:

1

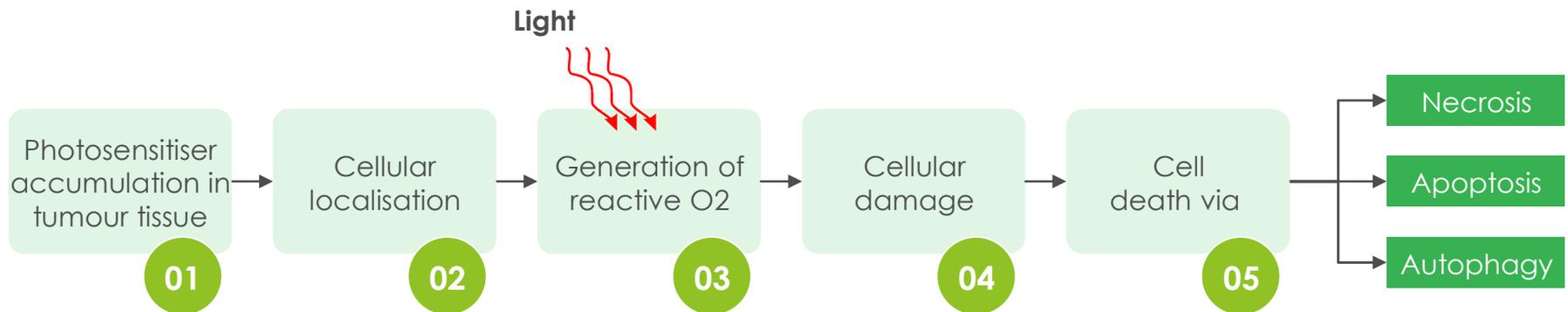
Combines photosensitiser compound with light-induced activation

2

Generates reactive oxygen species ("ROS") causing damage to only targeted cells

3

Direct cell death along with activation of immune response



# LEAD CANCER DRUG CANDIDATE INV043

## PATHWAY TO A US\$271B MARKET OPPORTUNITY<sup>1</sup>

Invion is leading the global research and development of the Next-Generation Photodynamic Therapy (NGPDT) called Photosoft™ for the treatment of a range of cancers, atherosclerosis and infectious diseases

### Proof-of-Concept studies of lead candidate INV043 has been shown to:



Selectively absorbed by cancer cells and not healthy tissue



Effective in regressing multiple types of cancer *in vivo*



Stimulate the body's natural immune response



Work additively with blockbuster ICI<sup>2</sup> drugs



Be non-toxic, safe and have limited side effects



Support the translation into successful clinical trials<sup>3</sup>

<sup>1</sup> Oncology market exceeded US\$270.5 billion in 2021 and is forecast to grow at 10.2% CAGR between 2022 and 2028, according to GMI

<sup>2</sup> Immune Checkpoint Inhibitor (ICI) therapies are part of the Immunotherapy market

<sup>3</sup> Scheduled for 2H CY2022 or 1H CY2023

# KEY PARTNERSHIPS

## WORLD-LEADING INSTITUTIONS



- Global bioscience medical research institute
- Over 400 scientists focused on ground-breaking discoveries addressing complex problems in human diseases including cancer
- Photosoft™ discovery and development
- Proof of Concept studies focused on safety and efficacy<sup>1</sup>
- Translational work into clinical trial preparations



- World-class institute that combines its premier cancer research capability with its ability to translate that directly into the clinic
- Currently conducting about 500 clinical trials in cancer
- Pre-clinical studies initially focus on high-risk ano-genital cancers
- Successful studies will pave the way for human clinical trials

<sup>1</sup> <https://inviongroup.com/videos-reports/>

# Cancer Findings

Proof-of-Concept Studies on INV043



**Peter Mac**  
Peter MacCallum Cancer Centre  
Victoria Australia

**HUDSON**  
INSTITUTE OF MEDICAL RESEARCH

**INVION**<sup>™</sup>

# IMPROVED API: INV043

## KEY CHARACTERISTICS\*

### Active against multiple cancers

- INV043 successfully regressed established T-cell lymphoma, triple negative breast and pancreatic cancers *in vivo* (n=4-8/group).
- Formulations enable multiple routes of administration.
- Treatment activates an immune response.

### Strong therapeutic profile

- No toxicity identified up to 100x the therapeutic dose
- Selectively retained into tumours *in vivo*:
  - Within hours accumulates in tumour mass
  - Within a day INV043 is not detectable in healthy tissue
  - Remains concentrated within tumour mass for >3 days

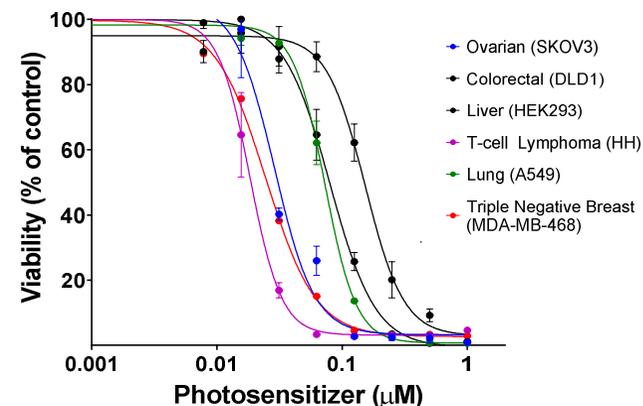
### Highly potent and selective

- ~600x greater phototoxicity than Talaporfin sodium (a widely used photosensitiser).
- No observed off target toxicity.
- No "dark" toxicity" until 20 to 300 times the therapeutic dose.

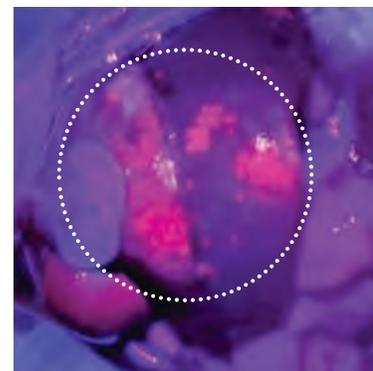
### Theranostic potential

- Two distinct light activations wavelengths
- **Diagnostic:** Fluorescence providing highly visible definition of tumour mass and margins.
  - **Therapeutic:** Activation of INV043 causes rapid cancer cell death and tumour regression.

### INV043 activity against multiple cancer cell types



### INV043 fluorescing in a tumour under light



\*Studies carried out by Hudson Institute

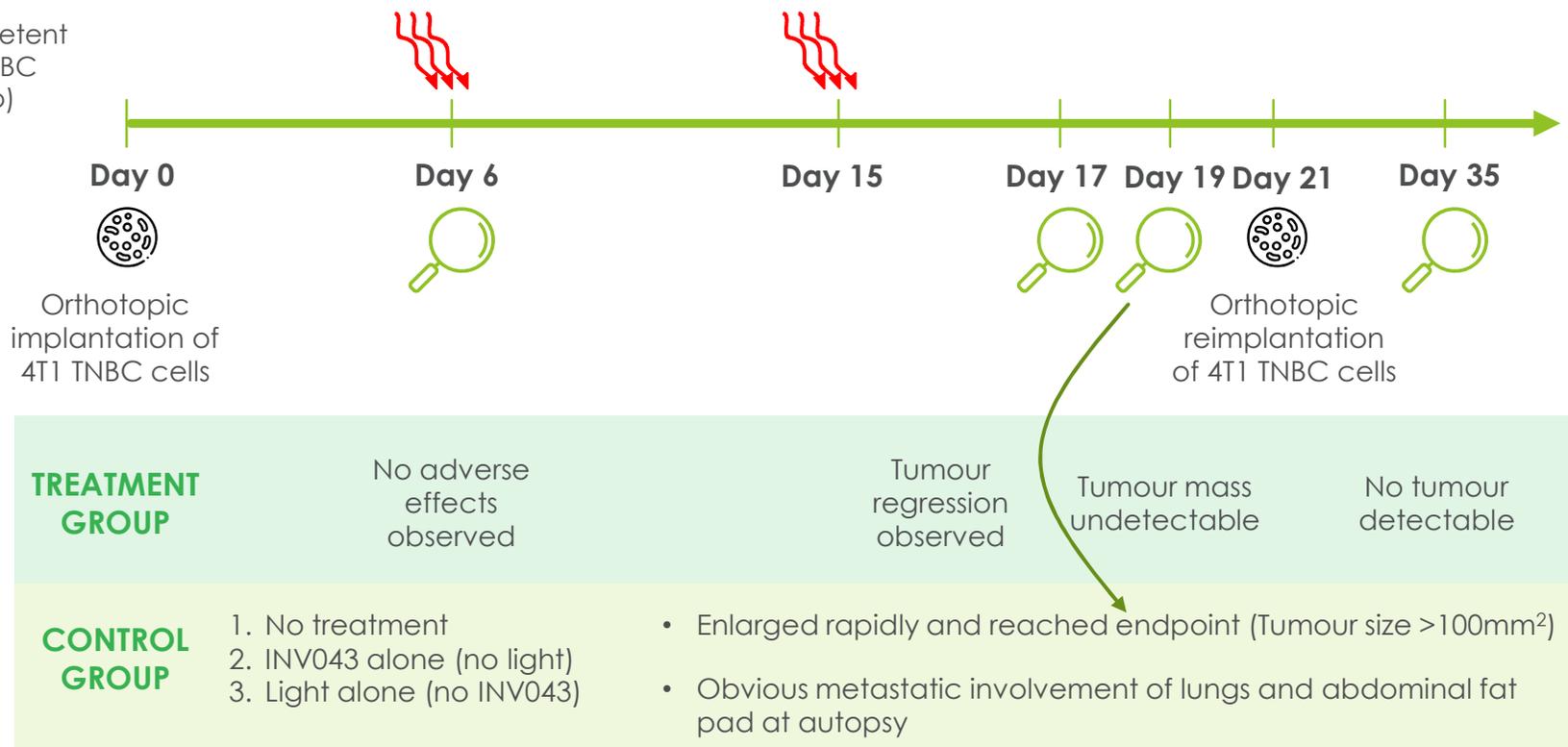
# PROOF OF CONCEPT: PRIMARY TUMOUR PILOT STUDY

## REGRESSION AND PROTECTIVE IMMUNITY

### Treatment with established tumours (INV043 with light)

- INV043 was injected intratumorally (0.1 mg/kg)
- 16 hours later, illuminated with red light
- No anaesthesia required, no adverse effects observed

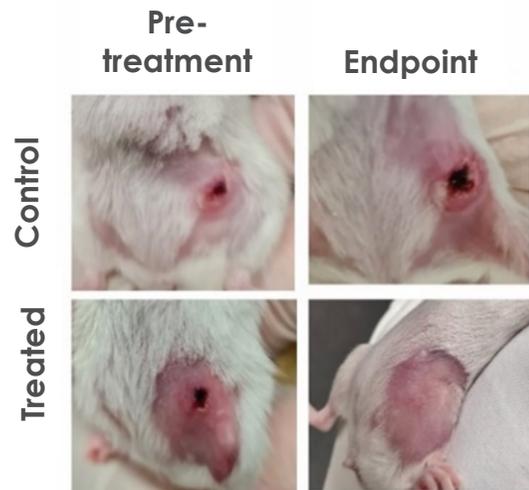
Immune competent mice with TNBC (n=3/group)



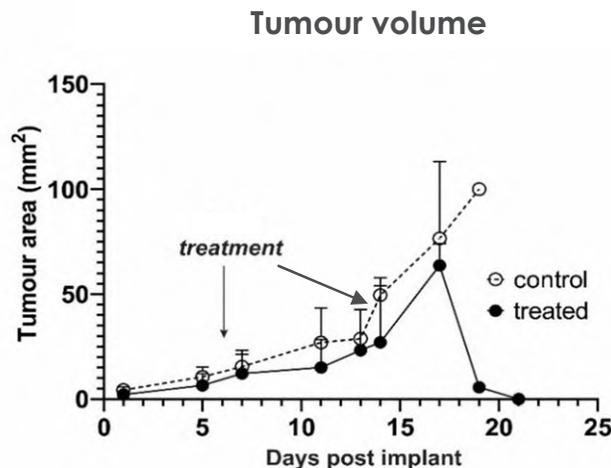
# PROOF OF CONCEPT: PRIMARY TUMOUR PILOT STUDY

## REGRESSION AND PROTECTIVE IMMUNITY

- Triple Negative Breast Cancer (TNBC) is a hard-to-treat cancer resistant to most chemotherapies
- Proof of Concept (PoC) pilot showed complete regression of TNBC in vivo following INV043 treatment
- Tumour mass undetectable two weeks after initial treatment and no scarring evident
- No recurrence of disease, re-challenge with TNBC implant could not re-establish new tumours, suggesting development of protective immunity
- Additional PoC tests being carried out by Hudson Institute



<https://inviongroup.com/videos-reports/>



**Figure 4. PDT using INV043 results in complete regression of established tumours.**

Mice with established 4T1 breast tumours treated with INV043 PDT at days 6 and 13 post-implant. Tumour size monitored until endpoint ( $\geq 100\text{mm}^2$ ). Treatment regressed established tumours to an undetectable level within 14 days of treatment. No tumour regrowth observed.  $n=3/\text{group}$ ; mean  $\pm$  SD

# ANAL CANCER SCC

## PROMISING RESULTS AGAINST NEW CANCER CLASS\*

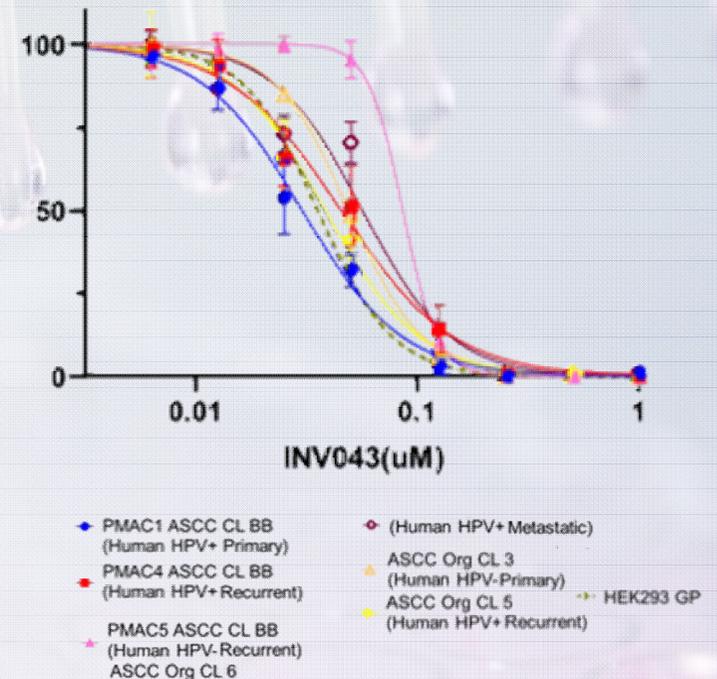
*In vitro* study showed INV043's effectiveness against six squamous cell carcinoma (SCC) cell lines that represent the full range of anal cancers

Most anal cancers are SCCs and are difficult to treat with the global market estimated to be worth US\$1.3bn by 2028 (6.3% CAGR)<sup>1</sup>

Findings were consistent with the results of work done at the Hudson Institute on other cancer types

Preclinical testing using topical delivery of INV043 started as a prelude to moving to clinical human testing of anal SCC

Cytotoxicity data of human anal SCC cells lines

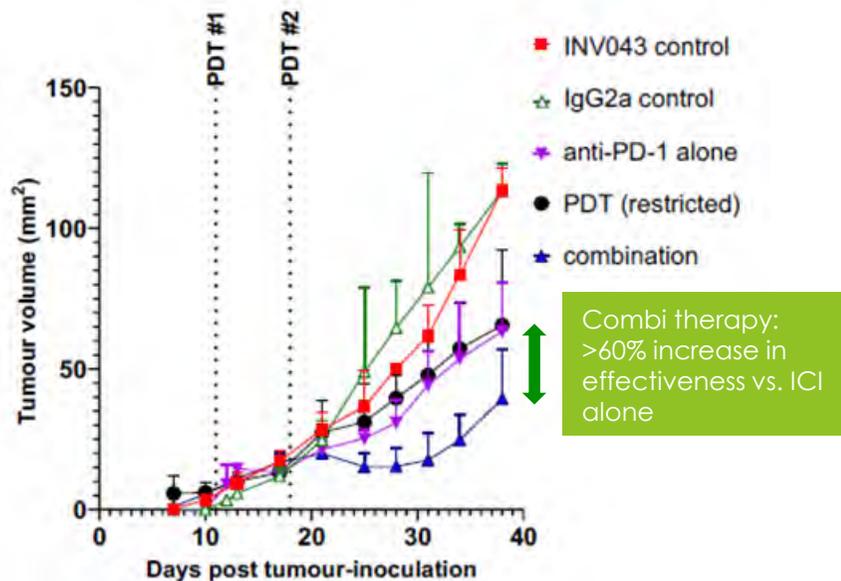


<sup>1</sup>Source: <https://www.coherentmarketinsights.com/market-insight/anal-cancer-market-4701>

\*Studies carried out by Peter Mac

# PROOF OF CONCEPT: IMMUNE CHECKPOINT INHIBITORS (ICI) COMBINATION THERAPY FOR A US\$140B MARKET<sup>1</sup> (BY 2030)

- Immune checkpoint inhibitors are widely used for the treatment of lung cancer and melanoma. However, ICI treatments are typically only effective on a small proportion of patients
- Proof of Concept (PoC) pilot by Hudson Institute showed both INV043 (under restricted administration) and anti-PD-1 therapies achieved a very similar level of tumour growth restriction following therapy, with tumour growth reduced by ~40% compared to controls
- A combination of INV043 with anti PD-1 provided substantially enhanced restriction (~65%) of tumour growth, with clear tumour regression despite the sub-optimal INV043 treatment protocol used



**Figure 5. INV043-PDT combines with immune checkpoint inhibition to regress tumour mass.**

Mice with established 4T1 breast tumours were treated using a restricted INV043 PDT protocol and / or anti PD-1 antibody over a period of 14 days. Tumour size was monitored until endpoint (tumour size  $\geq 100\text{mm}^2$ ).

Monotherapies restricted tumour growth compared to untreated controls; combination therapy regressed and stabilized tumours and achieved a ~65% reduction in tumour size at endpoint. INV043 control, no light activation; IgG2a control, isotype antibody control; combination, PDT+ anti PD-1. Additional control groups have been omitted for clarity. *mean +/- SD, n=4/group.*

The research activities involving the use of animals were carried out in accordance with relevant guidelines and regulations as well as with appropriate Animal Ethics Committee approval.

<sup>1</sup> <https://www.alliedmarketresearch.com/immune-check-point-inhibitors-market>



# Infectious Diseases

*Exploring the potential applications of  
Photosoft™*

**INVION**™

# BROAD-SPECTRUM ANTI-MICROBIAL POTENTIAL

INFECTIOUS DISEASES: EFFECTIVE AGAINST VIRUSES, BACTERIA AND FUNGI *IN VITRO*

“Antimicrobial resistance (AMR) is one of the top 10 threats facing humanity”

*World Health Organisation<sup>1</sup>*

**Leading Institutions:** Viroclinics conducted virus tests & ACARE (University of Adelaide) conducted bacteria and fungi tests

**Broad Spectrum Potential:** *In vitro* tests showed Photosoft™ to be effective against several types of pathogens, including antibiotic-resistant superbugs

**Need for New Treatment Options:** Potential for Photosoft™ as a new treatment class for polymicrobial infections and/or where pathogens cannot develop drug resistance

“ Given the general mode of action of PDT, we surmise that it is unlikely for superbugs to develop resistance to the compounds. ”

*Prof Darren J. Trott, Director, Australian Centre for Antimicrobial Resistance Ecology (ACARE), University of Adelaide*

# EFFECTIVE AGAINST SARS-CoV-2 IN VITRO

## ANTIVIRAL ACTIVITY AGAINST DELTA AND OMICRON VARIANTS

Nine out of ten Photosoft™ compounds tested displayed antiviral activity against both Delta and Omicron variants of SARS-CoV-2

Multiple Photosoft™ compounds show effectiveness against SAR-CoV-2 at far lower concentrations than Remdesivir

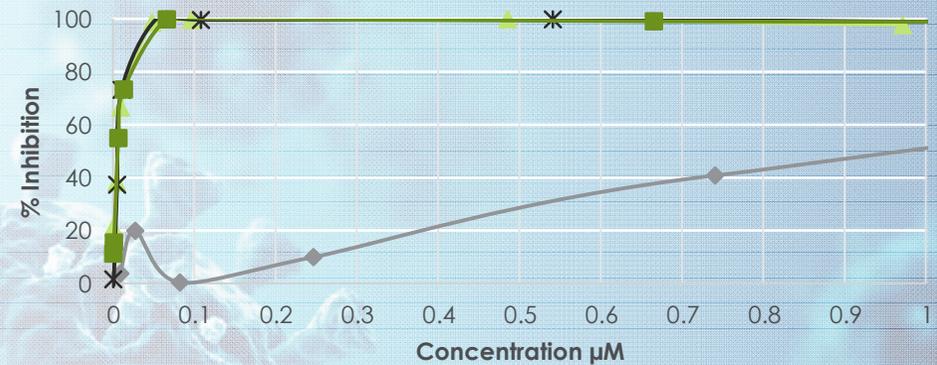
Antiviral activity occurred once Photosoft™ compounds were activated with red light

Photosoft™ compounds tested demonstrated either no or low cytotoxicity

The global coronavirus treatment market is forecast to reach US\$49bn by 2027 (17.5% CAGR)\*

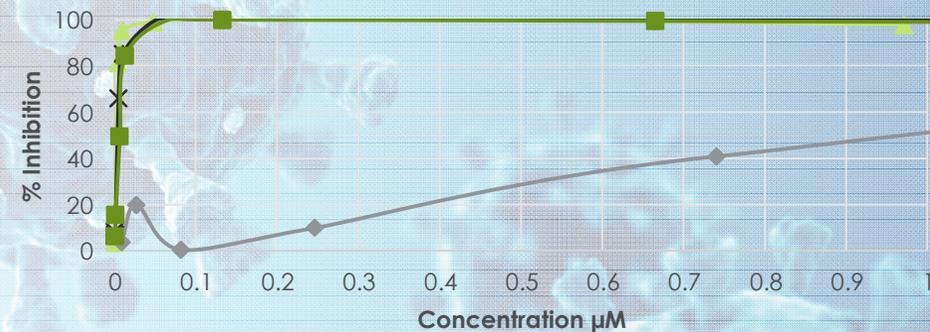
### SARS-CoV-2: Delta

Selected Photosoft™ Compounds vs. Remdesivir



### SARS-CoV-2: Omicron

Selected Photosoft™ Compounds vs. Remdesivir



▲ % Inhibition - Compound 7   
 ◆ % Inhibition - Remdesivir  
✕ % Inhibition - Compound 9   
 ■ % Inhibition - Compound 10

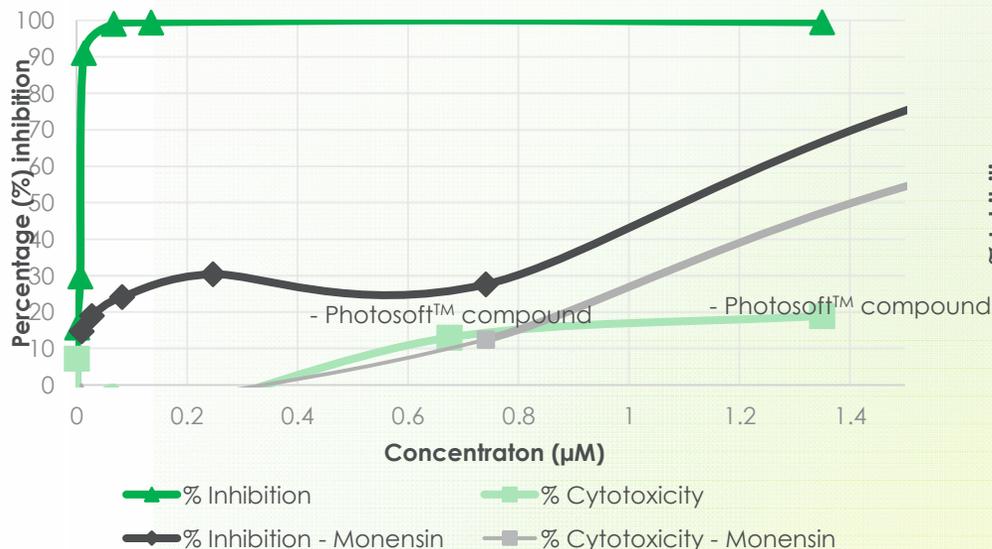
\*<https://www.coherentmarketinsights.com/market-insight/coronavirus-treatment-drugs-market-4312>

# EFFECTIVE AGAINST ZIKA AND DENGUE *IN VITRO*

## ANTIVIRAL ACTIVITY AGAINST ZIKA AND DENGUE

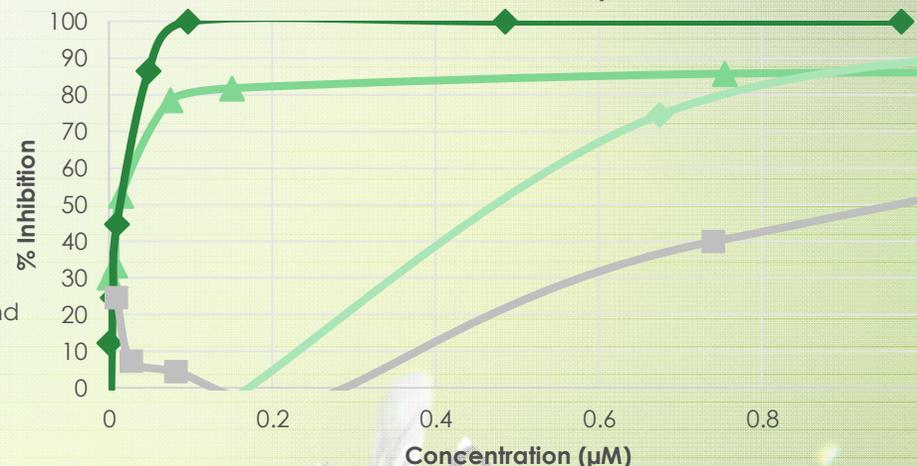
### Zika

Inhibition: Photosoft™ compound vs Monensin<sup>1</sup>



### Dengue

Inhibition: Selected Photosoft™ Compounds vs Monensin<sup>1</sup>



<sup>1</sup> Monensin is an antibiotic known to have activity against Zika in *in vitro* laboratory tests and was a control (benchmark) in these studies, but due to its *in vivo* toxicity cannot be used in humans

Several Photosoft™ compounds had >100x the activity of Monensin<sup>3</sup> (selected control) *in vitro*

One compound had an EC<sub>50</sub> (half max effective concentration) >90 times lower than Monensin

Zika virus is found in 86 countries and is linked to birth defects and other neurological complications

Dengue causes intense pain in joints and muscles, hence its nickname “breakbone fever”

Market is ~US\$17 billion in 2022<sup>1</sup> with no vaccines or treatments currently available<sup>2</sup>

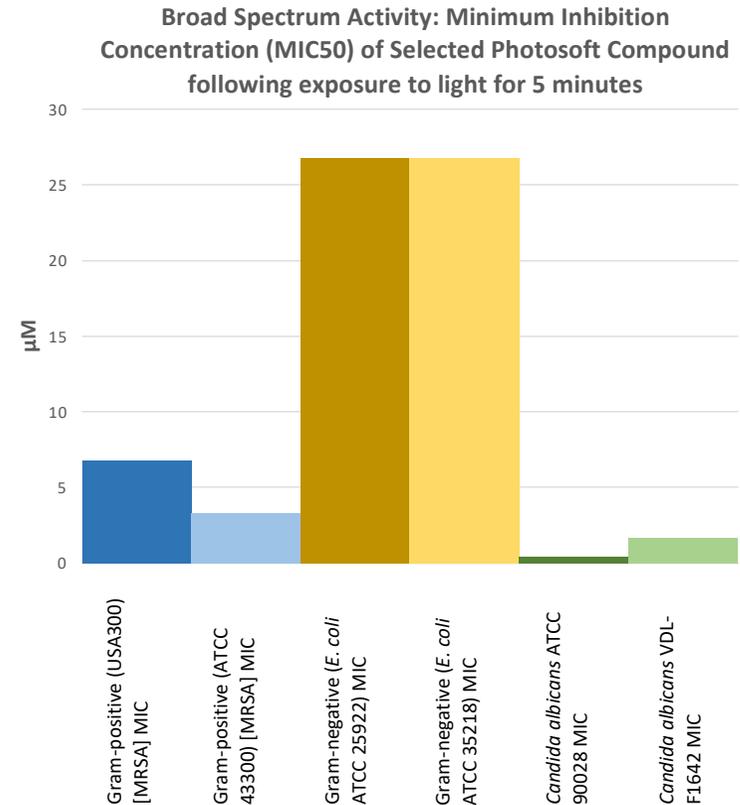
Treatment market is forecast to hit US\$1.3 billion by 2030<sup>4</sup>

# EFFECTIVE AGAINST BACTERIA AND FUNGI

## MRSA SUPERBUG, E.COLI BACTERIA & CANDIDA ALBICANS FUNGUS

- Several Photosoft™ compounds showed activity *in vitro* against multiple strains of antibiotic-resistant MRSA bacteria, *Escherichia coli* bacteria and *Candida albicans* fungus\*
- MRSA is an antibiotic resistant bacteria that is difficult to treat, with the World Health Organisation (WHO) having declared antimicrobial resistance (AMR) as one of the top 10 threats facing humanity
- Photosoft™'s mode of action has the potential to make it unlikely for superbugs to develop resistance

\*Tests undertaken at the Australian Centre for Antimicrobial Resistance Ecology (ACARE), University of Adelaide



Note: The *in vitro* studies that were conducted at the University of Adelaide used enrofloxacin and amphotericin B as control antibiotics for the antibacterial and antifungal tests, respectively.

# THE WAY FORWARD

## MULTIPLE CATALYSTS AND MILESTONES

↑  
Cancer  
↓

### Australia

- **Proof of Concept (PoC)** Building on in vivo work further demonstrating both safety and efficacy profiles
- **Pre-clinical Preparations:** Building foundations for clinical trials in multiple indications and internationally
- **Clinical Trials:** With strong in vitro and in vivo results demonstrating both safety and efficacy profiles, and across multiple cancer types, the next steps will be to conduct clinical trials in multiple indications, including
  - Skin Cancer (superficial basal cell carcinoma)
  - Anogenital Cancer
  - Other solid tumour cancers TBC<sup>1</sup>
- **GMP manufacturing and scale up:** Building capacity to scale up for global late-stage trials and commercialisation

Global

**Expand Internationally:**  
Leveraging Australian clinical trial data into later stage programs in other major markets

↑  
AID  
↓

Atherosclerosis and Infectious Diseases (AID)

Early stage broad based discovery  
Identification of target indications

Proof of Concept on targeted indications

<sup>1</sup> RMW Cho Group ("RMW") as licensor of Photosoft™ technology, is pursuing independent research in parallel with Invion's R&D efforts including a prostate cancer trial. The research is complementary/supplemental to Invion's development program. To the extent that Invion becomes aware of material information relating to RMW's studies, Invion will release the information to the ASX in compliance with its disclosure obligations (noting however that Invion is not involved in RMW's studies and does not have direct access to information)

# MANAGEMENT TEAM

## THE RIGHT EXPERTISE FOR SUCCESS



**THIAN CHEW**  
**EXECUTIVE CHAIRMAN & CEO**

- Managing Partner, Polar Ventures
- Executive Director, Goldman Sachs
- Director, KPMG Consulting, Senior Manager KPMG
- Adj. Prof. HKUST, MBA/MA Wharton School



**DR ANDREW STEPHENS**  
**HUDSON INSTITUTE, R&D**

- 15+ years in novel treatment R&D
- Founder, Ovarian Cancer Biomarker Group, Hudson Institute
- Postdoc. positions, the Uni. of Sydney and Prince Henry's Institute, PhD Biochemistry Monash Uni
- Published extensively, holds several patents



**DR SEBASTIAN MARCUCCIO**  
**CHEMISTRY**

- 15+ years in Pharmaceutical and organic chemistry developmental research
- 16+ years commercial experience in molecular based companies (Managing Director / Founder)
- Adj. Prof. La Trobe University, PhD Organic Chemistry ANU



**ALEXANDER BENNETT**  
**TECHNICAL ADVISOR, LIGHT**

- 35+ years in R&D, manufacturing and commercialisation of scientific instrumentation incl. ISO certifications
- GM Forensic Light Sources, Rofin Australia.
- Led Medical Light Source trial for PDT in skin cancers Peter MacCallum Cancer Centre



**MELANIE LEYDIN**  
**CFO**

- 25+ years in accounting profession
- Partner, Vistra
- CFO and Co. Secretary multiple biotech companies
- Fellow Gov. Institute of Australia, Chartered Acc't



**NICOLETTA MUNER**  
**REGULATORY AND CLINICAL DEVELOPMENT**

- 20+ years non-clinical and clinical drug development, quality, manufacturing, incl. EMA and US FDA approval
- Founder Canary Regulatory Affairs
- Global Regulatory Affairs, Clinuvel Pharmaceuticals
- Pre-clinical and regulatory affairs, Pfizer



**LOUISE WHITE**  
**MANUFACTURING AND QUALITY**

- 35+ years in the pharmaceutical industry, 13 years in vaccine manufacturing, CSL, Partner SeerPharma
- Senior roles in virology R&D, bacterial vaccines production, quality control and production planning
- Registered auditor for APVMA



**KIM STEEL**  
**CLINICAL TRIAL MANAGEMENT**

- 15+ years managing global and clinical drug and device studies from Phase I-IV across 14 countries
- Director, Sapro Consulting
- Project Director, Novotech
- Project Manager, Pacific Clinical Research Group

# SUMMARY



## **Cancer - Promising Results:**

Total tumour regression, immune response, potential ICI combination therapies



## **Infectious Diseases – Early Findings:**

*In vitro* effectiveness against multiple viruses & bacteria including SARS-CoV-2 (Delta and Omicron) and MRSA



**Cancer - Clinical Trials:** Human trials across several cancer types expected to commence 2023



**Well Funded:** Cancer program fully funded & AID partially funded by RMWC



**Multiple Growth Options:** Large addressable markets, multiple indications, partnership opportunities



## **Experienced Management, World-Leading Partnerships:**

Balance of expertise in life sciences and commercialisation combined with world-renowned partnerships

# MARKET OVERVIEW

## \$0.012

(as of 03 Oct 2022)

### Market Cap A\$77m

<b>Focus</b>	Clinical-stage life sciences company developing the Photosoft™ technology as a treatment for a range of diseases including cancers
<b>Issued Shares</b>	6,420,092,081
<b>Cash</b> (30 Sep 2022)	AUD \$7.8M
<b>Revenue</b> (Year ended 30 June 2022)	\$3.292M
<b>Symbol/ Exchange</b>	ASX: IVX

## YTD Share Price\*



## TOP 10 SHAREHOLDERS

	%IC
Polar Ventures Limited	8.49
BNP Paribas Nominees Pty Ltd	7.99
RMW Cho Health Technology Ltd	5.01
RMWC Pty Ltd	4.90
Mr Honsue Cho	4.43
NGPDT Greater China Ltd	4.25
Mei Jun Lin	4.24
ACSLNC Pty Ltd	3.79
Yong Chen	3.12
Citicorp Nominees Pty Ltd	2.32

\*As of 03 Oct 2022

**INVION**  **N** TM