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Daily news on ASX-listed biotechnology companies

Dr Boreham's Crucible: Invion

By Tim BOREHAM

ASX Code: IVX

Share price: 0.5 cents; **Shares on issue:** 6,424,532,206; **Market cap:** $32.1 million

Chief executive officer (and executive chair): Thian Chew

Board: Mr Chew (chair), Alan Yamashita, Rob Merriel, Alistair Bennallack

Financials (December half 2023): Revenue (effectively reimbursement from RMW Cho Group) $2.2 million (up 15%), loss of $714,000 (previous deficit $831,000); at March 31, 2024: receipts nil, operating cash outflows $554,000, cash $1.387 million, quarters of available funding: 2.5

Identifiable shareholders: RMW Cho Group/Michael (Honsue) Cho 14.3%, Polar Ventures (Thian Chew) 8.5%, Shengli Wang and associates 6.4%

Invion chief Thian Chew says investors often ask him why the cancer and anti-infectives house has been largely silent about the company's progress.

"Over the last couple of years, we have been doing the essential - but, from the market's view, very uninteresting – pre-clinical work such as safety and toxicology studies," Mr Chew says.

"We could have made more announcements for announcements' sake, but what's the point if it's not … relevant to investors?"

Indeed! Other biotechs could take a leaf out of Invion's minimalist book and refrain from trivial disclosures. They know who they are.

In recent months, however, Invion's news flow has intensified as the company firms up plans to conduct human cancer trials, including for non-melanoma skin cancer and ano-genital cancers (which don't exactly inspire Pink Ribbon Day campaigns).

At the heart of Invion's quest is Photosoft, a novel photodynamic therapy (PDT).

Before PDT was injected into the company in late 2017, Invion had many assets and a history more tortuous than a medieval dungeon

"It's an old company with a new story," Mr Chew says.

Shining a new light on an old technique

By combining oxygen and light, photodynamic therapies are known to kill malignant cells and shut down tumors, with evidence they also stimulate the immune system.

PDT sounds like a new thang, but Danish physiologist Prof Niels Finsen got on to the idea in 1903 and snagged a Nobel Prize for his work.

Since then, at least 500 PDT trials have been carried out, with the Russians proving especially interested. But advancement was hampered by "off target" issues including toxicity and lack of solubility.

Eventually, the US Food and Drug Administration approved a PDT treatment for oesophageal cancer, in 1995. In 2017, Israel's Steba Biotech won European approval for its PDT prostate cancer treatment, Tookad.

A 'next-generation' PDT, Photosoft was developed over a decade ago by the RMW Cho Group, the vehicle of Melbourne businessman Michael Cho.

Photosoft is chlorophyll (plant) based and only accumulates in the cancer cells.

By adding conjugates to enhance selectivity, safety and potency, Invion aims to overcome the shortcomings of the old treatments.

About Invion

Invion started out as Cbio, which listed on the ASX in 2010 with an ultimately unsuccessful rheumatoid arthritis (lupus) program.

The company changed its name to Invion in August 2012 on the back of a smoking cessation aid, but a lack of partner interest stubbed that one out.

In 2013, director Dr James Campbell brought in Dr Greg Collier, former head of leukaemia drug developer Chemgenex, as CEO.

In a back-door listing deal in late 2017, Invion entered an exclusive distribution and licence agreement to develop Photosoft.

In 2019, the Hudson Institute said it would partner with Invion to research and develop PDTs, while in the same year Melbourne's Peter MacCallum Cancer Centre announced a collaboration to research ano-genital cancers.

Dr Collier retired in October 2019 and was replaced by chief operating officer Craig Newton in April 2018 (Mr Newton left in October 2020).

A former executive director of the investment bank Goldman Sachs, Mr Chew met Mr Cho by chance and the rest - as they say - is history.

Expanding boundaries

Under the initial 2017 deal, Cho Group agreed to fund all research and Invion was granted exclusive dibs on Australia and New Zealand.

In 2021-'22, the arrangement was tweaked with Invion becoming licencee for Asia Pacific (excluding China) for cancer and inflammatory diseases.

Invion also has rights to infectious diseases in the US, Canada and Hong Kong.

The $US3 billion South Korean oncology market is of particular interest, given its rising cancer incidence.

In return for contributing $900,000 to RMW Cho Group for prior development costs, Invion expects half of all upfront fees, milestone payments and royalties from sub-licencing the technology in the 'good' half of the peninsula.

Across the board, Invion will finance 75 percent of future clinical work, with Cho Group bearing the other 25 percent. With non-clinical costs, the burden flips the other way.

Invion's pre-clinical work to date has centred on its Peter MacCallum Cancer Centre and Hudson Institute collaborations.

This included mice study results for triple-negative breast cancer showing no disease recurrence - and some protective immunity.

This was followed up with in-vitro studies to treat atherosclerosis and infectious diseases, including Zika virus, dengue fever, fungi and Sars-Cov-2.

In the clinic (skin cancer)

Invion's first human trial is an open-label study in non-melanoma skin cancer (NMSC), the most prevalent cancer - although not the deadliest. The skin cancer capital of the world, Australia, is an easy patient recruiting ground.

The company expects to enrol between 18 and 174 subjects - probably from one site in Queensland - who will be treated with topical ointment.

There’s a twist to the tale, in that there’s already an approved PDT NMSC therapy: Galderma’s Metvix. The primary standard of care - surgery or cryosurgery - also works well.

So what problem is Invion seeking to resolve? The answer lies in increased comfort (less pain) and aesthetics (less scarring).

“Metvix has been around for a long time,” Mr Chew says. “It doesn’t work as well as surgery but has better cosmetic results. Because it’s painful, 10 percent of patients can’t finish treatment.”

Mr Chew says the trial will be open-label and adaptive in terms of dose optimization and the like.

Biotech greybeards will recall that the ASX-listed Peplin was sold to Denmark’s Leo Pharma for $US287 million ($440 million) in 2009. Peplin’s lead product was a CSIRO-developed, topically-applied liquid skin cancer treatment derived from the milky sap of a common weed.

In the clinic (ano-genital cancers)

The trouble with penile and anal cancers is that sufferers are too embarrassed to see their doctor until it’s too late. Former Charlie’s Angel Farrah Fawcett became a poster child for the rare disease after succumbing to it in 2007, aged only 62.

In March 2024, the company reported what Peter MacCallum investigator Prof Rob Ramsay dubbed “exceptional” and “consistent” anal squamous cell carcinoma mice trial results.

Across the 40 diseased mice, 80 percent of tumors treated with a combined INV043/immune checkpoint inhibitor (ICI) therapy showed tumor control, with 70 percent showing no tumor volume. The more typical response rate for immune checkpoint inhibitor alone is 12 percent. Furthermore, 10 percent of tumors increased in volume but the culprit was pus rather than cancer.

Two earlier Hudson Institute combination trials for triple negative breast cancer showed a 65 percent improvement in tumor volume versus standalone ICI therapy.

Look out for the patent cliff

Immune checkpoint inhibitors are blockbuster cancer drugs but many are reaching the end of their patent life, some in four short years. For example, Merck derived $US25 billion of revenue from Keytruda last year - 42 percent of its total sales.

Combining an ICI with a PDT raises the prospect of delaying a nasty fall down a patent cliff, with even a one-month extension adding meaningful value. Meanwhile Mr Chew notes the versatility of INV043, in that it can be applied topically, intravenously, sublingually or via injection straight to the tumor.

Infectious diseases and all the rest

Invion's interest in infectious diseases centres on microbial resistance - rated by the World Health Organisation as one of the top threats to humanity.

Depending on the FDA's requirements, the company's first trial will be periodontal (tooth implant recipients).

About a quarter to half of implant recipients get an infection such as peri-implantitis or mucositis, sometimes so seriously the procedure has to be redone.

The company is also eyeing a program for HPV, the most prevalent sexually transmitted disease in the world despite the good work of Gardasil vaccine co-creator Prof Ian Frazer.

In March 2024, South Korea's Dr I&B Co said it would conduct Photosoft human safety and efficacy tests, including proof-of-concept human trials for HPV. Invion retains all rights to the tech.

Given DR I&B funds the trials, there's little downside for Invion.

Asian cancers pose a medical mystery

Invion is also interested in lung cancer, especially given the rising incidence of the disease among Asian women who have never smoked.

No one knows why. One theory being inhalation of vaporised cooking oil.

Also, 86 percent of the incidence of the back-of-the-nose nasopharyngeal cancer is in Asia, particularly in southern China. Hence the disease in known as 'Cantonese cancer'.

Gastro-oesophageal cancers are highly prevalent in Korea and Japan, possibly because of high consumption of cured meats and pickled vegetables.

These mysteries are being probed by Stanford Medicine's Center for Asian Health Research and Education, which Mr Chew recently joined as an advisory board member.

Finances and performance

With $1.9 million in the bank as of the end of December, Invion needs to use its funds prudently and seek non-dilutive sources for more of the readies.

"We are very open to collaborations and licencing," Mr Chew says.

He says there's more shareholder value in advancing multiple trials across more than one cancer, rather than pursuing a single narrow indication all the way to regulatory approval.

Meanwhile Cho Group's Invion holding has been reduced from its initial 70 percent, to around 14 percent as a result of share distributions to prior collaborators.

Via his Polar Ventures, Mr Chew holds 8.5 percent, while insiders and prior Cho Group collaborators account for about half of the register.

Over the last 12 months Invion shares have traded thinly between 0.4 cents and 0.8 cents. Post the 2017 back-door listing, the shares peaked at 4.0 cents in April 2018.

Dr Boreham's diagnosis:

With the two human cancer trials pending and more in the pipeline, Invion finally looks to be gaining traction.

But with a $38 million market cap, the stock is valued more like a university spin-off than a clinical-stage company.

Previously, Invion in effect was a contract research organisation for Cho Group with rights only to the local and NZ markets. With its turf now covering Asia Pacific and North America, Invion is closer to controlling its own destiny.

Mr Chew admits Invion's corporate structure needs to be further streamlined and liquidity improved, so that investors can focus on the clinical development.

"It is complicated, but it can be solved," Mr Chew says.

Disclosure: Dr Boreham is not a qualified medical practitioner and does not possess a doctorate of any sort. It is complicated, but it can be solved.