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## **InvitroCue Limited (ASX:IVQ)**

*Transforming Bio-Analytics*

Investor Presentation – February 2016

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- InvitroCue is a Singapore based life sciences company aiming to meet the global analytics service market for pharmaceutical, medical devices, cosmetic, veterinary and healthcare sectors
- Led by a highly credentialed and experienced management and supporting team
- Well established partnerships with leading, global pharmaceutical companies
- Patented technologies with direct operating presence in Singapore and China
- Expansion into new market sectors to diversify revenue streams and significantly de-risk
- Contracts in place with major pharmaceutical companies already earning modest revenue
- Aggressive expansion into rapidly growing Chinese medical market – ensuring first mover advantage

**InvitroCue – Aiming to transform bioanalytics**

## Digital Pathology

**CueFibrosis** is an analytical method for automated and quantitative assessment of liver disease or drug-induced liver damage in human and animal tissue samples.

United States, China and Singapore patent applications pending.

**InvitroCue holds exclusive worldwide rights for manufacturing & usage.**

**Focus in year 2016** – CuePet delivers pet care solutions in the veterinary clinics, entirely from tissue collection, to staining, to imaging and diagnosis of animal diseases.

## Cell-based Assaying

**HepatoCue** is a polymeric membrane that enhances hepatocyte (liver) function for testing in drug metabolic assays.

United States and Europe patent applications pending; Singapore patent granted; Japan patent granted.

**InvitroCue holds exclusive worldwide rights for manufacturing & usage.**

**Scaffold System (3D)** is a thin cellulosic sponge for cell culture which stimulates complex cell microenvironment.

United States patent granted; Japan patent granted; Singapore patent granted; Europe patent applications pending.

**InvitroCue holds exclusive distribution rights.**

**Focus in year 2016** – SkinCue, a co-culture Asian-skin model for in vitro testing of cosmetics products and ingredients and cosmetics product safety testing.

# Expanding Customer Base



**Research Contract:** Study liver stage of plasmodium (malarial parasite) infection using patented 3D in vitro modeling



**Research Contract:** Image acquisition and fibrosis analysis for drug efficacy evaluation using InvitroCue's proprietary CueFibrosis method



**Contract with Experimental Therapeutics Centre (ETC) A\*STAR:** Study DMPK properties of compounds in proprietary 3D system



**Contract with Bioprocessing Technology Institute (BTI) A\*STAR:** Contract for image analytics and digital pathology services



**Contract with Yulong Biomedical Group, China:** Supplying digital pathology services



**Contract with London School of Hygiene & Tropical Medicine:** Services in modeling malaria and leishmaniasis in 3D cell models



**Exclusive Distribution Agreement:** ImageIQ compliments IVQ's service offering



**Contract with TNO:** Development of novel 3D Nash models



**MOU with NCCS:** MOU signed for collaborative research into HCC offering another significant market opportunity

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# Strategic Partnerships

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Technology Licensing



Collaboration agreement for providing services on 3D organotypic cultures for downstream applications



Collaboration for the development of the analytic tools



Collaboration for the development of the analytic tools & in vitro models



Research collaboration on cell-based models for liver disease (hepatitis C) study in Prof. Harry Yu's lab



Research Collaboration Agreement for evaluation of CuePath with human & animal samples



Research collaboration on validation of cell-based models for hepatotoxicity conducted in Prof. Harry Yu's lab



Collaboration with SMART (Singapore-MIT Alliance for Research & Technology) for development of analytical tools



Collaboration for the development of the analytic tools and in vitro models



Research collaboration on cell-based models for cell differentiation/maturation

# Timeline of Growth

Current focus on Singapore & Chinese markets with planned expansion to Australia, USA and Europe

Singapore

China

Australia

USA

Europe

Digital Pathology

Cell-based Assaying

## 2016 - Veterinary

Provide fast screening to aid in clinical diagnosis of pets and livestock

## 2017 – Livestock

Agribusiness and livestock markets provide significant expansion opportunities for applicable technologies

## 2016 - Cosmetics

Significant push for 'cruelty free' cosmetics, opportune time to move into the market

## 2016 – Digital Pathology

End-to-end solution for tissue assessment and providing pathological reports

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# China Focused Expansion Strategy

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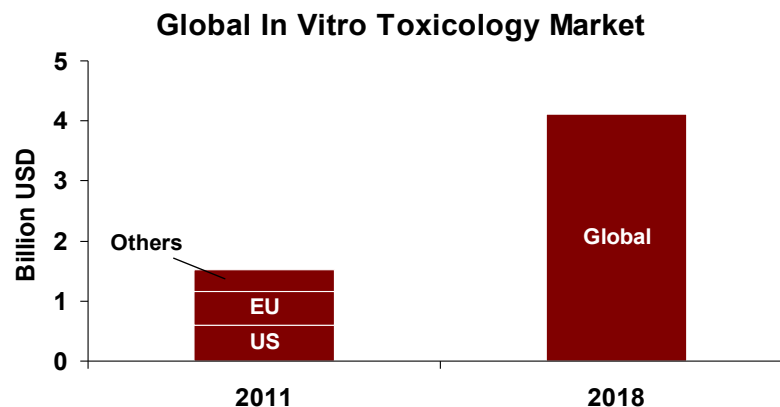
- China is now the world's second largest pharmaceutical market
- China to reach spending levels of US\$185 billion by 2018
- Since bans on animal testing for locally manufactured cosmetics, in vitro testing is a significant growth market
- Chinese Business Unit likely to contribute revenue from contracts near term
- China business unit to have distinct focus on:
  - Digital Pathology & Pharmaceutical Companies
  - Hospitals
  - Cosmetics Testing



# Market Overview – New Drug Testing

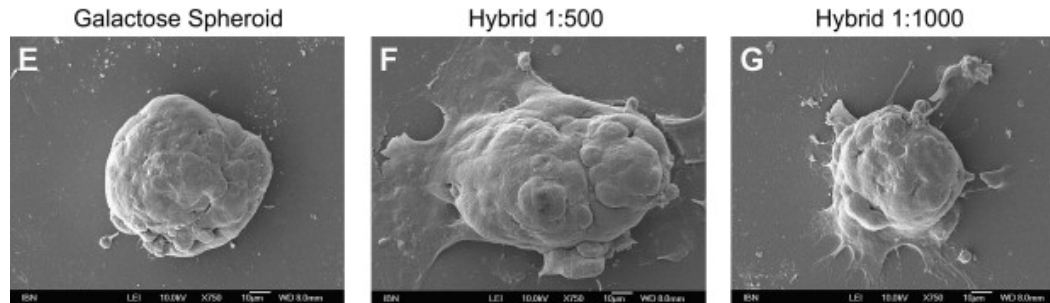


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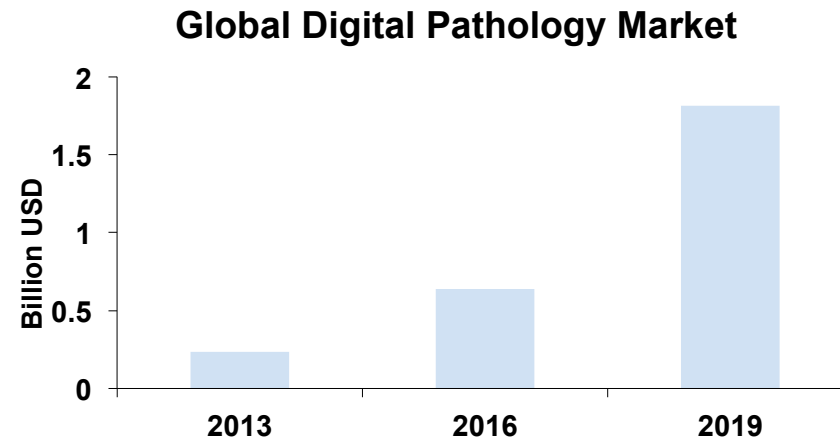
- Global spending on in vitro drug or cell-based assaying estimated at circa US\$2.7b in 2015
- Global spending on in vitro drug or cell-based assaying anticipated to be over US\$4b by 2018
- Pharmaceutical industry estimated to account for circa US\$1b, CAGR of 18.2% from 2010 - 2015
- The average cost of developing a new drug is now approaching US\$5 billion
- There is a growing need for predictive, high throughput models to test compounds in vitro to reduce attrition rates and economically de-risk this process – significant market opportunity for IVQ





Images showing InvitroCue's novel cell-based liver models

- Drug induced liver injury (DILI – liver failure or death caused by use of new drugs, compounds & vaccines) is a major risk and health problem, both for drug companies and the healthcare system
- There are many factors that limit current liver models and methods – these represent major potential market opportunities for InvitroCue
- InvitroCue offers liver assaying services using an advanced 3D liver model in the laboratory (most current in vitro cell-based assays are 2D) – **critical point of difference**
- The 3D novel cell-based liver model replicates many of the complex *in vivo* (in body) functions and traits of the liver that conventional 2D models cannot



- Global spending on skin care to increase to US\$121b by 2021
- Europe, Israel, Brazil, United Kingdom, New Zealand and India have all banned the import of cosmetics tested on animals
- China has also stopped animal testing for locally manufactured cosmetics
- China will account for circa 55% of skin care market growth through to 2018
- Global digital pathology market is estimated to reach US\$5.7b by 2020 with a CAGR of 14.3%

# Market Opportunities in Cosmetic Testing



- Globally, the cosmetics product testing market is sizeable and growing
- Europe has limited the use of animal testing in cosmetic products many
- Asian markets such (i.e. Japan & China) are moving away from animal testing
- India has banned all forms of animal testing, China has abolished animal testing for non-special use cosmetics
- China and India are two of the fastest growing markets for cosmetics testing in Asia
- There is clearly a growing need for in vitro testing and testing on volunteers of Asian origin
- InvitroCue has partnered with a leading Contract Research Organisation (CRO) to deliver a full suite of world leading cosmetic testing services

**IVQ is well placed to leverage the growing cosmetics product testing market**

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# Capital Structure Upon Reinstatement



Issued & Paid Up Capital		
	Number	%
Existing Shares	179,669,416	40.5%
Shares issued on conversion of convertible notes	5,000,000	1.1%
Shares issued on consideration for acquisition	227,941,637	51.3%
Shares issued pursuant to prospectus	31,478,000	7.1%
<b>Total</b>	<b>444,089,053</b>	<b>100%</b>

Options		
	Number	%
Options issued to lead manager Fiscus Capital Pty Ltd on successful completion of Offer, exercisable on or before 14 January 2019 (being 3 years from date of issue) at \$0.10 per option	1,000,000	100%
<b>Total</b>	<b>1,000,000</b>	<b>100%</b>

Warrants		
	Number	%
Warrants to First Pulse Capital Limited on conversion of convertible notes on or before 14 July 2018 (being 30 months from date of issue) at \$0.10 per warrant	10,000,000	100%
<b>Total</b>	<b>10,000,000</b>	<b>100%</b>

Escrowed Securities	
Ordinary fully paid	Escrowed 24 months from quotation date
Ordinary fully paid	Escrowed 12 months from date of issue (06/02/2016)
Ordinary fully paid	Escrowed 12 months from date of issue (21/08/2016)
Unlisted option expiring 14/01/2019 at \$0.10	Escrowed 24 months from quotation date
Unlisted warrants expiring 14/01/2019 at \$0.10	Escrowed 12 months from date of issue (14/01/2017)

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# Board & Management



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- InvitroCue is led by an experienced Board and hands on management team
- The Company's Board is strongly underpinned by highly credentialed and multi-disciplinary Singapore management team
- Founder has a strong entrepreneurial background in commercialising new technologies
- Aim to establish China operating team to begin generating contract revenue in the near term



**Dr. Fang Boon Sing**

Founder & Executive Director



**Ms. Ee Ting Ng**

Independent Non-Executive Director



**Mr. Chow-Yee Koh**

Independent Director & Secretary



**Ms. Jamie Khoo Gee Choo**

Independent Non-Executive Chairman

# Investment Summary



- Investment in an established, patented technology – no ongoing R&D costs
- Existing contracts with modest revenue already being delivered ‘proves’ technologies
- Highly skilled & experienced management, underpinned by well credentialed operations team
- Exposure to a diversity of industries & market sectors will significantly derisk revenue profile
- Opportunity to further grow and develop existing relationships with research partners & leading global pharmaceutical companies
- Clearly defined business strategy initially focussing on Singapore and Chinese markets
- Well placed to leverage market opportunity in China through unique service offerings & first mover advantage
- Global market opportunities in growing areas of drug development and cosmetics testing

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# Contact Us



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