

Reproductive Health Science

INVESTOR UPDATE

Dr Michelle Fraser, CEO and Managing Director September 2015

Forward Looking Statements

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Preimplantation genetic screening (PGS)

- 96% of aneuploid embryos (ie embryos with the incorrect number of chromosomes) fail to implant resulting in an unsuccessful IVF transfer
- By identifying these aneuploid embryos prior to IVF transfer, the chances of an unsuccessful transfer are significantly reduced
- This is known as "Pre-implantation Genetic Screening" ("PGS")



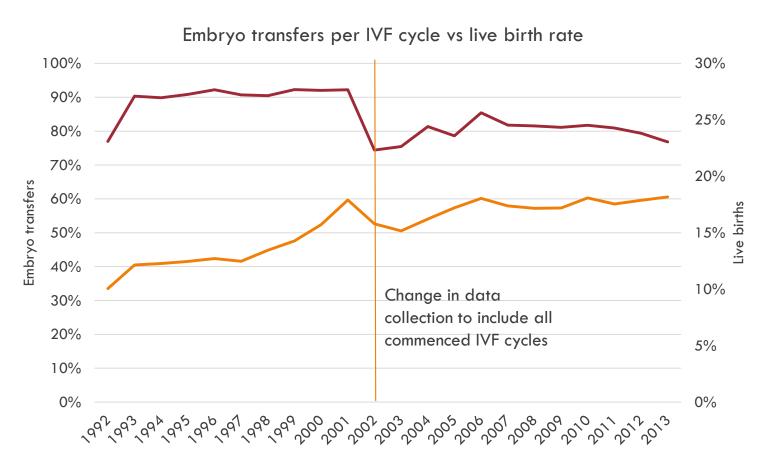
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The clinical intent of PGS

- To increase IVF implantation rates and ultimately take home baby rates
- To reduce the number of embryo transfers required to achieve a successful outcome
 - Cost saving
 - Time saving
 - Creates a more positive patient experience than multiple failed cycles
- The IVF industry is increasingly incorporating PGS in patient management and business planning based on published data and their own experience



IVF and the impact of improvements



Although there has not been an increase in embryo transfers per IVF cycle, the live birth rate continues to increase, suggesting that more transfers are successful



Reproductive Health Science (RHS)

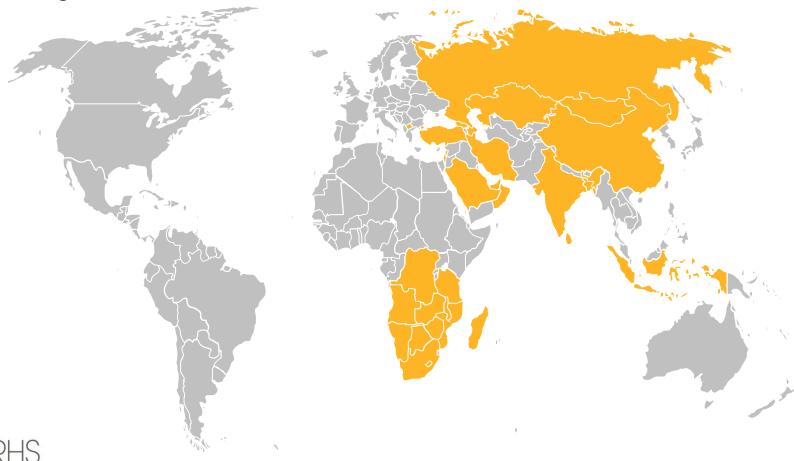
- RHS is a developer of novel products for the analysis of the genetic content of single cells
- Our lead product EmbryoCellectTM contains:
 - DNA amplification and fluorescent labelling components and
 - A microarray for counting the number of chromosomes in a single human cell

This product is being applied to improve the success rate of In-Vitro Fertilisation (IVF) through Pre-Implantation Genetic Screening (PGS)



EmbryoCellectTM global marketing

8 distributors plus direct sales to more than 30% of the global IVF market



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The global IVF market

Country	IVF cycles (% of glo		Population (millions)	IVF cycles per million people	RHS distributor
Russia	80,000	(4.3%)	144	555	BioChem Mack
Iran	35,000	(1.9%)	77	455	Vitco
UAE and Saudi Arabia	8,000	(0.4%)	37	216	Reprolab
Turkey	45,000	(2.4%)	76	587	Tani Medikal
India	80,000	(4.3%)	1,265	63	SAR Healthline
Indonesia	3,500	(0.2%)	252	14	Direct
South Africa	5,500	(0.3%)	54	102	Delfran
Israel	32,000	(1.7%)	8	3,902	Al-Rad
Australia	62,000	(3.3%)	23	2,605	Direct - service
China	250,000	(13.3%)	1,361	184	Miaoquan
USA	163,000	(8.7%)	320	509	



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The rest of the World, predominantly Europe, make up the remaining 40.8% of the global IVF market

Data sourced from publications and RHS distributor supplied information

The EmbryoCellectTM distributors

- The distributor relationships provide RHS with access to their customer networks that have been built over many years
 - EmbryoCellectTM is part of a catalogue of IVF products with established channels
 - Some RHS distributors also supply the necessary equipment and have in-house technical expertise to assist with new laboratory set-up and local customer support

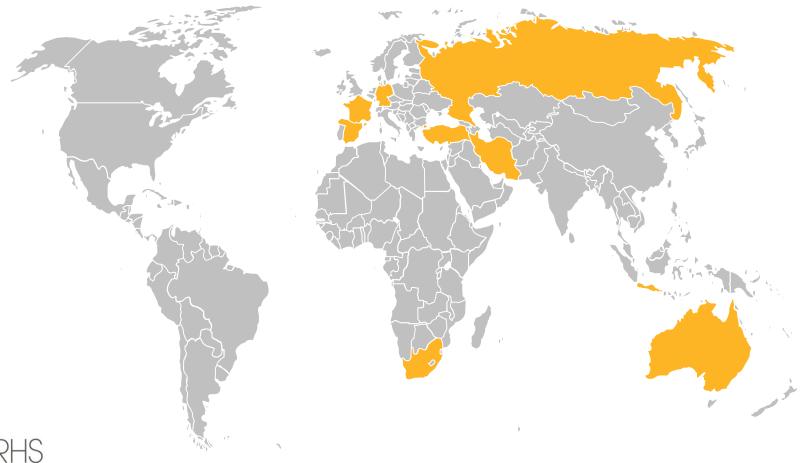


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EmbryoCellectTM global marketing

There are 18 clinical validation studies with KOLs underway and a further 3 planned



Sales strategy – in-field evaluations

- Evaluation by select key clinics
 - RHS supplies small numbers of EmbryoCellectTM kits to select key account IVF clinics to obtain end user feedback
 - Local marketing considerations individually addressed by working closely with the clinics and distributors to provide RHS with an indication of the required distributor and clinical users in-market support
 - Short term studies, predominantly benchmarking against other PGS platforms, by clinics are underway



EmbryoCellectTM global marketing

RHS first training course attendees



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Sales strategy – training courses

- RHS held its first EmbryoCellectTM training course at our facilities in August 2015
 - Attended by representatives from 11 clinics in Australia, China, Russia, Turkey and Indonesia
 - Provided attendees with hands-on training, laboratory set-up advice and access to RHS expertise
- Based on positive market feedback and further enquiries, a second training course is being scheduled for November



RHS PGS service business

- Established to meet customer needs
 - Requires shipment of samples to RHS and availability at the IVF clinic of an embryologist capable of undertaking biopsy and vitrification
 - Utilises RHS expertise and infrastructure to support clinics who are establishing PGS
 - Enhances EmbryoCellectTM uptake and awareness
 - Represents an additional revenue stream to RHS
 - Current service provision with flindersfertility and Morula IVF (Indonesia)



EmbryoCellectTM global marketing

International conferences since EmbryoCellectTM launch

- European Society for Human Reproduction and Embryology
 - Munich 2014, exhibitor
 - Lisbon 2015, exhibitor
- American Society for Reproduction Medicine
 - Honolulu 2014, exhibitor
 - Baltimore October 2015, exhibitor
- Preimplantation Genetic Screening International Symposium
 - Chicago 2015, speaker

□ National conferences since EmbryoCellectTM launch

- Fertility Society of Australia
 - Brisbane 2014
 - Canberra 2015, invited speaker
- Scientists in Reproductive Technologies
 - Rottnest Island 2015, invited speaker
 - Canberra 2015



EmbryoCellectTM Competitive Advantages

- Robust single cell validation
 - conducted by RHS prior to clinical use to ensure product accuracy
- Embryo testing externally validated against competing PGS products
 - providing end user feedback and product enhancements and evidence of equivalent performance
- Ease of use
 - allowing clinics new to PGS to introduce the system with minimal upskilling
- □ Simple interpretation
 - not reliant on complicated algorithms providing faster, clearer results
 - No complex genetic counselling
 - limiting ethical and legal risks
 - Cost competitive pricing
 - allowing broader patient access



The RHS IVF Microarray Kit EmbryoCellectTM

- The end user product comprises the PCR and Labelling Kit and the microarray
 - Manufacturing scale-up of the RHS microarray is uncomplicated and inexpensive
- □ The kits are research use only products





Microarrays or Next Generation Sequencing?

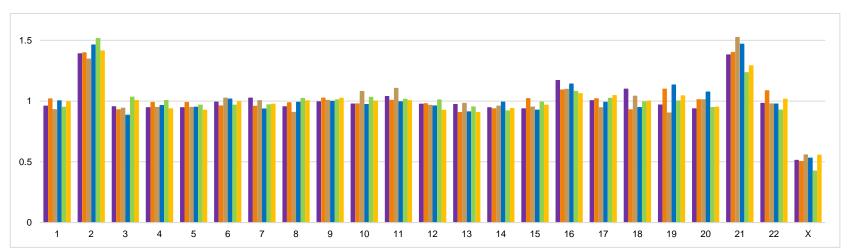
What are the drivers?

- Increased throughput suited to larger IVF clinics or centralised service providers
- Possible reduced hands on time
- Cost savings when analysing 24 samples in a batch
- Future improved resolution compared to microarrays, currently there is no difference
- Microarrays are still the better option for smaller clinics or when a fresh embryo transfer is required
 - Lower set-up costs
 - Smaller batch sizes
- With current technologies, the 6 picograms of DNA that is in a single cell is not enough to achieve a whole genome sequence



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RHS and Next Generation Sequencing



MiSeq reads for 48,XY,+2,+21 single cells normalized to 46,XX single cells

- RHS have validated that the single cell aneuploidy detectable using EmbryoCellectTM is also detectable using sequencing
 - RHS plans to launch a lysis and whole genome amplification kit for this purpose
 - This kit would also have application in single cell genetic analysis beyond the IVF market



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Profit & Loss Jan to June 2015

- □ First EmbryoCellectTM sales were recognised in H1 2015
- Total operating expenses for H1 2015 were \$922,726
 - Average monthly cash burn = \$160,000
- The Company continues to maintain tight controls over operating costs whilst commercialising EmbryoCellectTM



Financial Position

Cash at bank 1 July 2015	0.92m
July placement proceeds	1.23m
Total cash at 1 July including placement	2.15m
R&D Tax Refund anticipated Oct 2015	0.25m approx.
Monthly operating costs	160k

- The July cash position provides sufficient funds to cover operations for more than 14 months before taking into account sales
- Kit sales September quarter \$80k, services \$3k
- Kit sales and services are anticipated to build during the December quarter



The Opportunity : IVF and PGS Market Forecasts

2013 data

(3% of IVF market)**

1.7m*

51,000

204,000

4

	Global IVF cycles per annum
	Global PGS cycles per annum
SOL S	Number of tests per IVF cycle (average, estimate)
	Number of PGS tests per annum
	*Estimated based on these bains a s
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*Estimated based on there being a reported 1.5m IVF cycles in 2010 and 10% growth per annum ** Illumina estimate Jan 2014 *** RHS estimate



Forecast 2019

(annual growth 10%)

(20% of IVF market)***

3m

4

2.4m

600,000

The RHS goal

- RHS estimates that 20% of global IVF market will be using PGS by 2020. The current uptake varies between countries with the Australian PGS market being one of the highest, currently estimated at 30% of IVF cycles
- RHS aiming for 20% of overall global PGS market by 2020. Our current product reach is in over 30% of the global IVF market.



Corporate Overview

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xclusively in-licensed atent family	Granted patent family in most key territories to method for detecting chromosomal abnormalities	
rimary value driver	Clinical impact in the IVF market	
ingle cell genetic nalysis know-how	Kits developed for the PCR amplification of multiple and single cells for microarrays	

Key assets

Primary value driver Global product sales and key partnerships

21 September 2015 data

ASX Code	RHS
Shares on Issue	59m
Share Price	15c
Options	7.53m
Market Capitalisation	\$8.85m
Cash at 21 Sept 2015	\$1.67m

Recent Corporate Highlights

- Service provision commences with 2 clinics
- Distributor agreements with 8 companies covering over 30% of the global IVF market
- RHS conducts EmbryoCellectTM training
- \$1.3m placement completed in July 2015

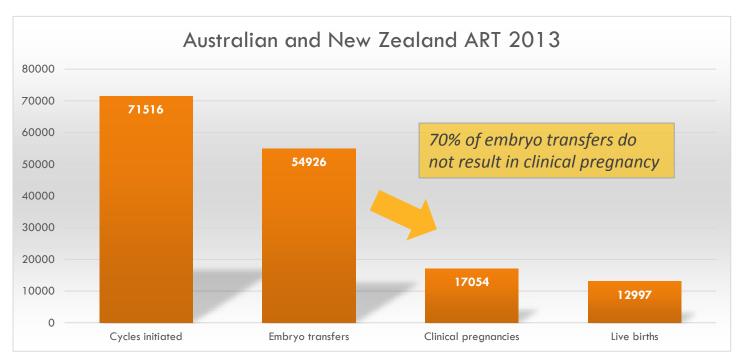


Appendix of information slides

- IVF A clear need for improvement
- IVF and advanced maternal age
- Factors driving increased PGS use
- IVF and PGS Market Forecasts
- RHS background
- The RHS products
- Intellectual Property
- Key Competitors



IVF – A clear need for improvement



Assisted Reproductive Technology in Australia and New Zealand 2013, published September 2015

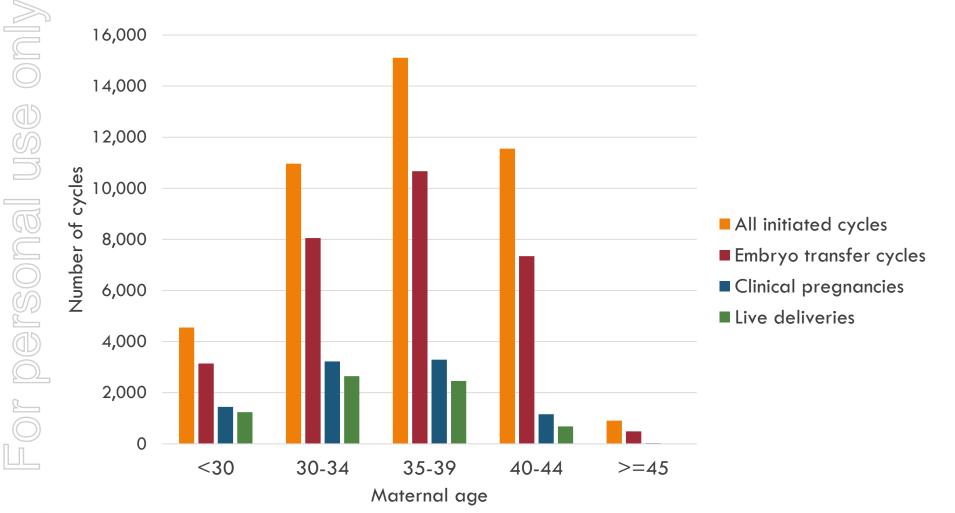
96% of aneuploid IVF embryos fail to implant (Scott et al, 2013)



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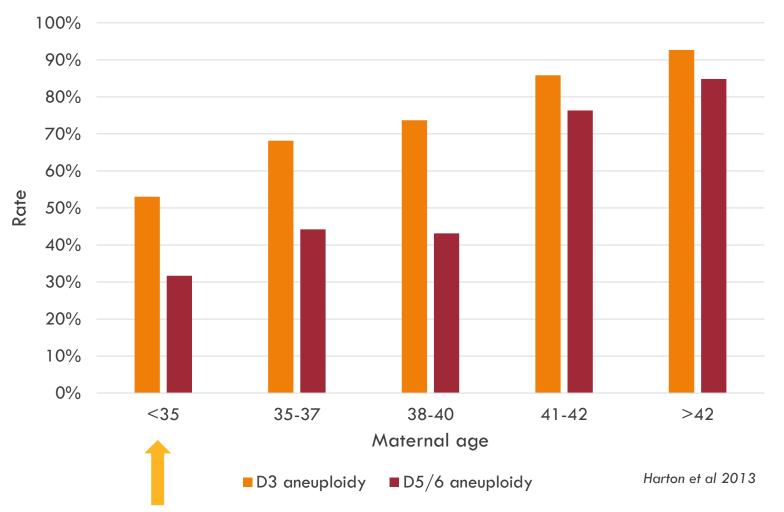
ART success rate and maternal age





Assisted Reproductive Technology in Australia and New Zealand 2013, published September 2015

Aneuploidy and maternal age





Even younger IVF patients have significant numbers of aneuploid embryos

28 8 "No one would knowingly transfer an aneuploid embryo" Handyside, 2013

The growth of IVF and PGS

The IVF market itself is growing globally, which generates significant untapped potential for PGS





IVF and PGS market growth

IVF market potential

- Local: In 2014 Monash IVF joined Virtus Health on the ASX; Primary Health entered the IVF market targeting low cost treatment
- International: In 2010 it was estimated that there were 48.5m couples experiencing fertility issues globally. The global IVF market is approximately 1.7m cycles per annum and was valued at \$9.3bn in 2012. The global IVF market is forecast to grow to \$21.6bn by 2020
- □ Illumina estimated in 2013 that 3% of IVF cycles include PGS
 - Equates to 51,000 IVF cycles, average 4 embryos tested per cycle, estimated 204,000 tests per annum
 - Australian IVF clinics offer PGS for approximately \$700 per embryo



Background of RHS



- □ Commenced single cell genomics R&D in 2004
- Initial venture capital investment Oct 2007
 - \$4.4m invested and \$1.3m grant funding leveraged
- Listed on ASX at \$0.20 in April 2014
- Located within the BioSA Incubator at Thebarton, South Australia
 - Dedicated laboratory and office space
 - Manufacturing capability with scope for scale-up
- Established network of commercial partners



Board of Directors

Dr David Brookes Non-Executive Chairman	Director of Atcor Medical Holdings Ltd (ACG:ASX); medical practitioner & biotechnology consultant; MBBS; FACRRM; FAICD
Dr Michelle Fraser Managing Director and CEO	PhD (molecular biology); Grad Dip Science & Technology Commercialisation; GAICD
Ms Sue MacLeman Non-Executive Director	Distinguished career in biotechnology with wealth of industry experience; has been CEO and a Board member of a number of publicly-listed companies in both the USA and Australia; BPharm; MMktg; MLaw; FACPP; FAICD
Mr Fabian Dwyer Non-Executive Director	Experienced senior sales and marketing executive with several pharmaceutical companies and has held CEO roles in research and commercialisation companies; BPharm; MBA; MRPharmS; FAICD
Mr Johnathon Matthews Non-Executive Director	Executive director of The Pipette Company; previously held positions at Australian Treasury, ASX and Commonwealth Bank; BEc; BComm; LLB; GAICD
Emeritus Professor Colin Matthews AO Alternate Non-Executive Director	Inaugural director of RHS, Single Cell Pty Ltd, Flinders IVF; co- founder and director of The Pipette Company; former Director ReproMed; Chairman of Research Committee and Board member of Channel 7 Research Foundation. Chairman RHS' Clinical & Scientific Advisory Committee

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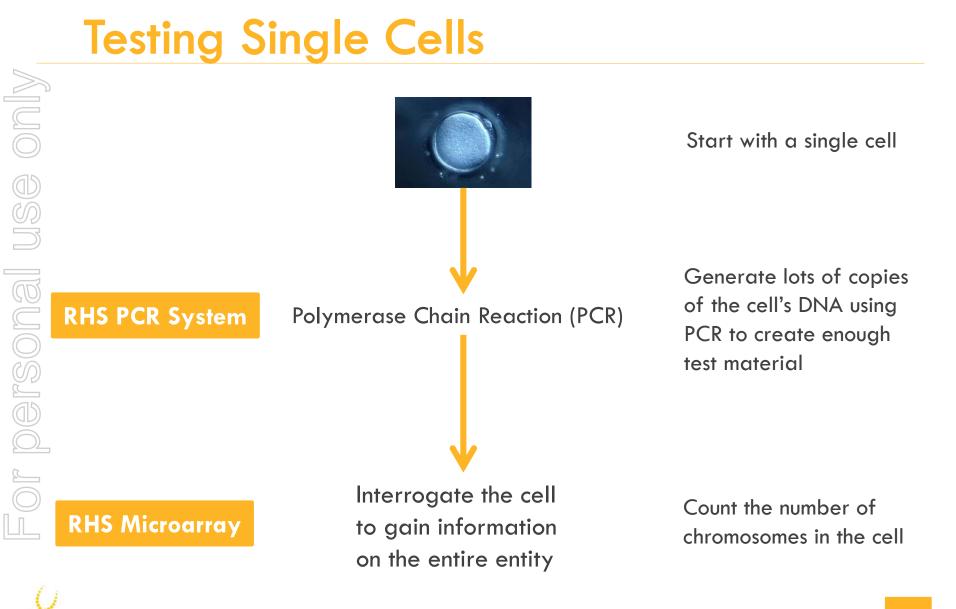
What are they?

How do they work?

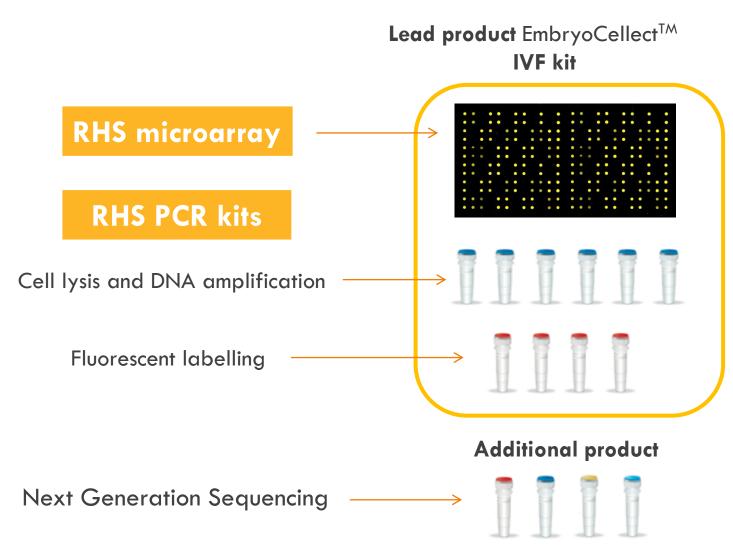
What is their potential?

Lead product \rightarrow EmbryoCellectTM for IVF PGS (**P**re-implantation **G**enetic **S**creening)

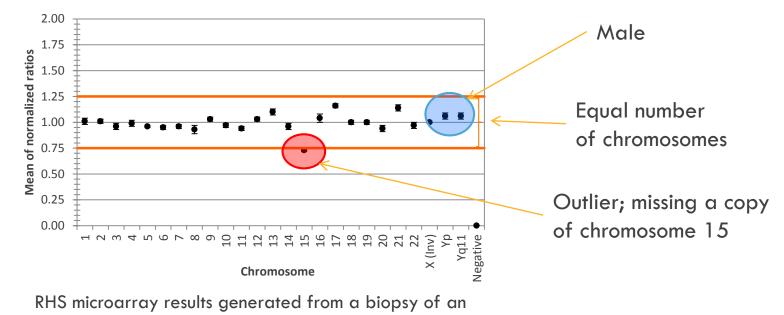




RHS Products



RHS Microarray EmbryoCellectTM - improved, simpler PGS



aneuploid embryo (45,XY,-15)

The RHS microarray is able to generate visually simple results requiring minimal interpretation and limited genetic counselling. RHS has validated that accuracy of its microarray with single cell chromosome analysis and externally validated embryo testing



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Intellectual Property

- Microarray patent family;
 - RHS has exclusively in-licensed a patent family from The University of Adelaide
 - Patent has been granted/allowed in the United States of America, Australia, New Zealand, Canada, Europe and China and is imminent in Hong Kong
- RHS has more than 10 years of know-how, providing significant expertise in the genetic analysis of low copy number DNA and single cells
- These technologies have broader applications



Key Competitors in Single Cell Analysis

Technology	Company
DNA amplification	Rubicon Genomics Inc, Sigma-Aldrich Co LLC, Qiagen NV, Yikon Genomics
Microarrays	Illumina Inc*, Agilent Technologies Inc, Natera Inc, Oxford Gene Technologies
Sequencing	Life Technologies Corp**, Illumina Inc, Fluidigm Corp

*In September 2012, BlueGnome was acquired by Illumina for USD \$95.5m including USD \$88m in initial cash payments. At that time, Bluegnome were generating USD\$17m in revenues and \$1m in profits **In February 2014, Thermo Fisher Scientific acquired Life Technologies

RHS products compete across the DNA amplification, microarray and sequencing markets





Reproductive Health Science

AT THE FOREFRONT OF SINGLE CELL GENETIC ANALYSIS

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