

### Message from the CEO

Dear Shareholder,



Welcome to this August edition of our newsletter.

Having recently closed the 2014 financial year with excellent financial and operational results it is my pleasure to give this update on the company. With a net profit of \$242,000 in the first half of the year we continued with revenue growth in the second half. Concurrently our research spending is up as we progress with our clinical programs.

#### MK antibody program is on track

Operationally, we have advanced our 'first in man' anti-midkine antibody (MK Ab or CAB 102) program with the completion of humanisation, lead selection and the commencement of GMP manufacturing. We are about to make some key decisions, such as CTN (Clinical Trial Notification) or IND (Investigational New Drug) path, which will affect timing of our clinical studies.

This is a critical event for Cellmid and one that we have been preparing for since 2008, when the midkine technology was acquired from Cell Signals. It was clear to us at the time that the therapeutic potential of midkine was immense. So was the data accompanying the acquisition, which took us the following two years to analyse, validate, protect and prioritise.

Since 2010 we have been on a rational drug development path which is about to take us to the most rewarding phase; first in man clinical studies. As our antibodies belong to a rare group of 'first in class' drugs, we have a real potential to develop breakthrough therapies in cancer and inflammatory diseases. We will soon have the chance to demonstrate that our antibody is safe for humans, before proceeding to clinical efficacy studies.

#### New era in anti-aging hair care is great opportunity for our consumer health division

Much happened in our consumer health business as well since the acquisition of Advangen Inc in May 2013. In Australia we have learnt a lot about distribution channels

and started to build the lucrative salon market in March 2014. At this stage we are growing the sales force organically, which means that we've been expanding on a state by state basis. In Japan we have opened new channels and developed new products for some of our existing distributors like Natural Garden. As previously foreshadowed we will start seeing the results through increased revenues from late 2014.

But the story goes much further than that. We are experiencing one of the most dynamic periods in the \$80 billion global hair care market. We are seeing double digit annual growth generally, but the fastest growing segment is the anti-aging hair care, which includes products for hair loss, volume or quality concerns.

Thanks to the dedicated efforts of our Japanese scientists who continue to innovate, and the recent independent validation of FGF5 as a hair growth target, we stand out in this crowd as the only natural product that has scientifically validated and biologically active ingredients. Our products actually make the hair grow better, faster, stronger and thicker.

This opens up substantial new markets for us globally. To take advantage of this megatrend we are developing new products that specifically target the anti-aging hair care segment, both for men and women.


#### Adding to our dedicated team

The dedication of our staff is evident from the results the company has achieved in the past few years. We have recently added to our talented team and we are delighted to welcome our new Clinical Trial Director, Sarah Culhane.

Sarah has a wealth of experience in managing clinical trials in large and small pharmaceutical and biotechnology companies, as well as running programs with clinical research organisations. Her skills, knowledge and contacts will be essential to the success of our first clinical trial.

In all of our business units we have a transformational and challenging year ahead of us. Without a doubt this is the most exciting period in Cellmid's history.

Maria Halasz, CEO

 @mariahalasz

## Advangen is primed to take advantage of new hair care megatrend

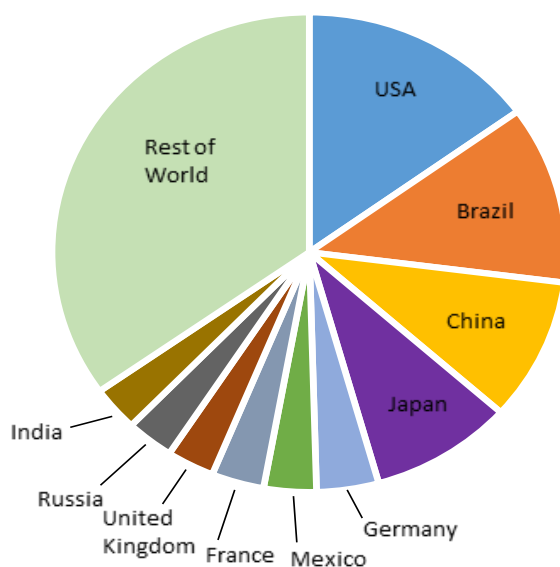
The global hair care market is around \$80 billion annually and has been growing rapidly during the past few years. Innovation in hair care has increasingly become performance driven and this new megatrend has seen consumers wanting products that address anti-aging concerns such as hair loss and thinning, greying, volume, breakage, and drying.



The anti-aging hair care segment is by far the fastest growing within the top five geographic regions. It has been driven by the Baby Boomers and Gen-X enjoying much longer life expectancy and having an increasing desire to maintain a healthier lifestyle as well as a more youthful appearance.

Whilst the segment is awash with polymer based products that essentially 'stick' to the hair to make it look thicker, there is a distinct lack of active shampoos and lotions on the market that address the actual biology of the hair. With a range of safe and efficacious FGF5 inhibitors Advangen stands alone in this market.

Top 10 Hair Care Markets in 2013



In addition to Australia, Advangen's products are now sold in two out of five of the top hair care markets in the world, Japan and China. This is of course only the beginning and we expect to increase penetration in these markets as well as expand globally.

Since acquiring Advangen Inc. we have advanced our understanding of hair science and how FGF5 inhibition translates into novel, next-generation products that address the evolving needs of consumers. Whilst originally focused on reducing hair loss and increasing hair growth, we now understand that our products have broader applications with significantly larger markets.

An exciting new application is prevention of greying of the hair. We know that by slowing the rate of hair fall and keeping the hair follicle in the growing phase longer, the process of greying is also slowed. This is because melanocytes, which are responsible for hair colour, appear at the onset of the growth phase and are removed as the hair falls only to re-activate once the hair begins to grow again. As we age, melanocytes lose their ability to produce colour and our growth phase tends to shorten significantly speeding up the hair cycle and thus increasing the potential for greying.

Another opportunity is eye lash growth, where the market is dominated by prostaglandin based products with a drug like side effect profile. In contrast, naturally derived FGF5 inhibitors are expected to be safe, with similar efficacy.

To take advantage of these emerging trends, markets and product opportunities we are currently working on a global brand and product strategy. Assessing opportunities in established markets through brand partnerships (USA, Europe) and launching Advangen branded anti-aging hair care products in fast growing markets is part of the company's potential strategy going forward.



## Columbia University study shows FGF5 is crucial regulator of human hair loss

In mammals, the propensity to grow long, strong hair can vary widely between individuals, yet this propensity is often similar within family groups. This suggests that the ability to grow hair is an inherited trait, under the control of a specific gene (or genes) passed on between generations. Agricultural breeding of Angora (long-haired) variants of sheep, goats and rabbits is a clear example of this inheritance.

For many years scientists searched for the precise gene (s) controlling hair growth. The first breakthrough came in 1994 when researchers at the University of California discovered that if just a single gene in mice was 'switched off', they could breed perfectly healthy animals with extremely long coats. That gene was *FGF5*. Since then, scientists have confirmed that deletion of the *FGF5* gene also causes long hair growth in other animal species, including cats, dogs and even woolly mammoths!

The hair growth cycle is essentially identical in all mammals, including humans. Based on the emerging evidence of *FGF5*'s role in animals, in the late 1990's Advangen's visionary scientists reasoned that *FGF5* was also very likely to impact human hair growth. Based on this proposition they began to develop *FGF5*-inhibiting shampoos and lotions to block what they predicted would be the detrimental effects of *FGF5* in the human hair follicle. Their foresight paid off; laboratory and clinical testing showed that *FGF5* inhibiting compounds increased hair growth and reduced hair loss in humans.

However, it is only in the last two months that the first direct evidence of *FGF5* as a key regulator of human hair growth has finally emerged. One of the world's leading dermatology research labs has just reported their discovery in the prestigious American journal Proceed-

ings of the National Academy of Sciences (PNAS) in a paper entitled *FGF5* is a crucial regulator of hair length in humans. (PNAS; <http://www.pnas.org/content/early/2014/07/02/1402862111.abstract>).

As the title suggests, the team of scientists from Columbia University Medical Centre, New York, USA were able to conclusively show that *FGF5* gene dysfunction was the cause of abnormally long hair growth in three families with trichomegaly (extreme eyelash growth).

Trichomegaly is an ultra-rare condition with just a few cases ever formally reported in the medical literature. Subjects with trichomegaly are otherwise healthy but present with extremely long eyelashes. Eyelashes are a modified form of hair and are subject to the same growth cycle as scalp and other terminal hair follicles. As such, eyelashes are susceptible to the same molecular signals that affect hair on the head.

The researchers used a cutting edge genome analysis technique to screen every single gene in five affected individuals. They found that only mutations arising in a single gene, *FGF5*, caused trichomegaly. Advangen's scientists were right; *FGF5* is equally significant for human hair growth as it is for animals.

Advangen's scientists were far ahead of the curve in targeting *FGF5*. "From the first scientific reports of *FGF5*'s significance in animals, the team recognised the potential to safely and effectively treat hair loss and thinning by blocking *FGF5*."

Compellingly, the Columbia University study also validates blocking *FGF5* as a likely mechanism by which to promote eyelash growth.



Treatments that promote eyelash growth represent an exciting new market with high demand for scientifically validated products and little competition. The current market leader, Allergan, has the only approved treatment for eye lash growth (Latisse) which sold \$74 million in its first year of launch. Latisse has experienced \$10-15 million in annual growth since its inception and in 2013 reached over \$124 million in global sales.

## Cxbladder is powering on to become an important test for bladder cancer globally

Cellmid Licensee Pacific Edge is making all the right moves to achieve commercial success in key markets around the world for its novel bladder cancer detection test, Cxbladder. The test is commercially available and is now generating early revenues in Australia, New Zealand and most significantly in the USA. The company is in the process of commercial development in Spain and has singled out Japan and South East Asia as potential new market opportunities.

In the past twelve months Pacific Edge has built a solid footprint for Cxbladder in the US market with a certified laboratory, the rollout of its US sales and marketing force, and through its education programs which have built the reputation and awareness of the Cxbladder test among clinicians.

In their recently released Annual Report Pacific Edge Chairman Chris Swann said “evaluating haematuria (blood in the urine) in American patients for bladder cancer is a significant market of scale”.



He added “our goal of attaining a business with a gross revenue of \$100 million after five full years of trading remains our target and continues to be steadily attainable”.

## Celera-Quest reported progress with its clinical validation of LungDx

Since 2009 Quest (Celera) has continued to work toward the development, validation and launch of its lung cancer diagnostic test incorporating Cellmid’s novel oncology biomarker midkine. In a recent update, they advised that they have achieved major advances during the last twelve months. In particular, they reported on the clinical studies to be performed on the samples obtained from the US National Cancer Institute (NCI) sponsored Prostate, Lung, Colorectal, and Ovarian Cancer trial.

Quest (Celera) is in the process of testing of the samples on the Luminex platform with results expected to be submitted to the NCI’s data review committee later this year. In addition, Quest has reported on four other clinical studies conducted as part of its clinical validation program for the lung cancer test. Quest has exclusive rights to use midkine in a lung cancer test until 31 October 2014, unless they launch a product before that date. Given that they are successful in a product launch, they retain exclusivity. Otherwise they retain the right to continue to use midkine on a non-exclusive basis according to the terms of the license agreement.

## Fujikura Kasei license update

In 2013 Fujikura Kasei exercised its option to license Cellmid’s midkine antibodies for diagnostic purposes in Japan. At that time Cellmid received the requisite \$400K payment and we commenced negotiating the terms. The agreement is a not only a license but also a material supply contract. This requires specific pricing for the antibody supply from Cellmid to Fujikura. This pricing in turn depends on several factors. As Cellmid uses contract manufacturers, manufacturing costs depend on the quantity ordered at any one time. Naturally, the larger the quantity ordered, the cheaper the per gram production cost becomes.

In addition, Fujikura has to price its test at a level commercially viable within the Japanese diagnostic market. For this, they will need to know the exact amount of antibody used and the maximum price they can pay for the antibody component in each test for it to be commercial. This requires the test to be essentially fully completed and validated, ready for market. Fujikura has been diligently working on the validation of the test with assistance from Cellmid and we expect that the agreement will be signed as soon as costs and quantities can be reliably determined by both parties.



## Solid progress in our oncology program

Earlier this year Cellmid has achieved a major milestone with the successful humanising of its most promising oncology antibody. Designated CAB102, this antibody has been engineered for use in humans, and early manufacturing testing suggests that it can be made in sufficient quantities to make it a feasible drug product.

Cellmid plans to begin clinical testing of CAB102 in 2015. This all-important, first-in-human trial will primarily assess the safety and tolerability of CAB102 in patients with various types of cancers that express high levels of midkine. CAB102 is a true first-in-class therapy as midkine has never before been the target of any kind of drug. This makes the focus on safety even more stringent than for targets for which other drugs have already been tested.



In preparation for clinical testing two aspects fundamental to the program's success need to be properly executed. These are the preclinical safety testing and the manufacture of the drug product.

### Pre-clinical testing

A common misconception is that regulators such as the FDA and TGA will automatically value safety data obtained from humans as being more valuable than that from animal studies. This is generally not true. The ability to microscopically examine all organs by autopsy makes animal testing highly insightful. Such close examination is not possible in human patients. Cellmid is currently in late-stage planning of its pre-clinical safety program, which is expected to take four to six months.

### Drug manufacture

It is essential that the drug product which is tested in the pre-clinical safety studies is identical to the material that will be used in the clinic. Regulators place great emphasis on animal toxicology material being equivalent to clinical material.

Developing a satisfactory manufacturing process for biologic drugs like the CAB102 antibody is especially challenging; antibodies are large, complex molecules formed by precise combinations of two different proteins. They must be synthesised by living cells, not by a chemical process.

A specialised, highly stable cell line must be purpose engineered to produce the antibody, and the processes to grow, maintain and harvest these cells in large volumes necessary (100s-1000s of litres) are extremely complicated and easily contaminated.

Small changes in factors such as pH can alter both the quality and quantity of the drug product. Finally, the desired protein (CAB102) has to be purified and formulated in a stable, sterile, injectable form. This process normally takes up to 16-18 months, and costs in excess of \$2.5 million.

Cellmid has recently appointed its manufacturing partner, Rodon Biologics (Portugal), and commenced this manufacturing process. We have progressed through some of the technically most challenging parts without adverse events and expect that we will be able to produce CAB102 as planned.



## Welcoming our Clinical Trial Director, Sarah Culhane

We are delighted to welcome Sarah Culhane as our new Clinical Trial Director with overall responsibility for our CAB102 phase 1 clinical study. It is a privilege to have Sarah who has over twenty years' experience in clinical research.

She worked for multinational pharmaceutical companies and both global and Australian clinical research organisations. During her career, Sarah gained experience in a broad range of therapeutic areas and has extensive knowledge of all aspects of clinical development both from a hands-on and management perspective.

While working at various CROs, Sarah has been responsible for the establishment of clinical research departments and the associated development and implementation of required processes and procedures.

Sarah has also gained considerable expertise in consulting to local device and biotechnology companies, providing advice on clinical development plans and product strategy. Sarah has a pharmacy degree from the University of Sydney and masters degrees in health science and management.

"I'm excited to join the team and looking forward to taking Cellmid's novel anti-midkine antibody to the clinic" said Sarah.



Sarah Culhane  
Clinical Trial Director

## Baillieu Holst report published on Cellmid in May 2014

Stuart Roberts, one of Australia's leading healthcare analysts, initiated coverage on Cellmid in May this year. In his report Stuart has made several salient points about the company. Perhaps most importantly Cellmid was identified by the report as one of the few biotechnology companies with extensive intellectual property in relation to a novel target. We are pleased to see the recognition of our strategy to build and validate substan-

tial data packages around novel technologies which can be monetised at various stages of the product development process. Stuart also presents his conclusions on our cancer diagnostic and consumer health businesses.

The full version of the report is accessible on Cellmid's website [www.cellmid.com.au](http://www.cellmid.com.au).

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## Scientists from around the world came together at the Third Midkine Symposium

The Third Midkine Symposium in April delivered significant new findings on midkine biology, manufacture and clinical utility.



Professor Hideaki Shimada presents on midkine in patients with esophageal cancer

Building on the success of the first two midkine conferences held in Sydney (2010) and Istanbul (2012), the Third Midkine Symposium was our largest yet attracting key academic and industry leaders from eleven countries. It was fittingly hosted in the birthplace of midkine (Japan) by its discoverers, Emeritus Professor Takashi Muramatsu and Professor Kenji Kadomatsu.

For the first time Cellmid's commercial collaboration partners were invited to attend and the meeting was held under confidentiality to allow delegates to freely share and discuss novel discoveries and unpublished data which have since fostered both existing and also new collaborations between midkine scientists and Cellmid.

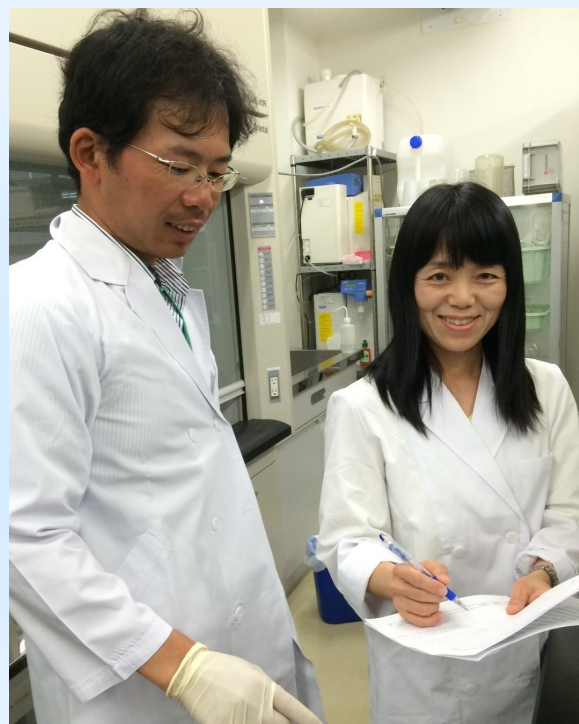
The midkine symposium continues the trend of spurring on the progress on midkine science. It continues to add enormous value to Cellmid's therapeutic and diagnostics programs through collaborations and partnerships.

## Advangen's scientists continue with new discoveries and intellectual property

Innovation is at the heart of any successful company and it is even more so in a fast moving consumer health arena. In response to changes in market trends and customer demand we are continually on the path of broadening the company's product offerings. Our next generation anti-aging hair care technologies aim to be more targeted and even more effective as a result of research by Advangen's scientists.

Since the acquisition in May 2013 our researchers have successfully identified and fractionated novel botanical extracts that block FGF5. Led by Advangen's Chief Scientist, Dr Masakuni Yamamoto, the team has discovered a number of compounds that occur naturally in plants and that effectively inhibit FGF5 with great efficacy. These novel compounds are the subject of recently filed patent applications, and we have developed new formulations using these supercharged molecules.

As a precursor to efficacy testing, these novel lotions have recently undergone safety testing in 50 healthy human subjects using the industry standard RIPT (repeated insult patch test) challenge, conducted at a US specialist laboratory under the supervision of a dermatologist. The results indicate that our lotions have not caused any adverse reaction in any of the subjects.



Dr Masato Namekata and Dr Yoshimi Yokota in Advangen's laboratory in Chiba, Japan

## evolis products have a new RRP

evolis tonic now \$59.00  
evolis shampoo now \$35.95

## Cellmid Shareholder Discount

A 30% discount may be  
redeemed for all Advangen and  
evolis products purchased at  
[www.evolisproducts.com.au](http://www.evolisproducts.com.au)  
or [www.advangen.com.au](http://www.advangen.com.au)

Use code: GROW123

\*Full price items only, not redeemable with any other  
discount or promotion, valid until 31 October 2014

## Cellmid - Fast Facts

### Listings

Australian Securities Exchange (ASX)

ASX Code: CDY

Issued Capital - Ordinary Shares  
735,585,702

### (Listed) Options

290,542,770 (exercise price \$0.034 exp. 23 October 2016)

### Market Capitalisation

A\$22M (19 March 2014)

### Cash Position

A\$2.5M (last reported 31 March 2014)

## Board

Dr David King

Chairman

Maria Halasz

Chief Executive Officer and  
Managing Director

Graeme Kaufman

Director

Martin Rogers

Director

## Senior Management

Maria Halasz

Chief Executive Officer and  
Managing Director

Darren Jones

Head of Product  
Development

Nicholas Falzon

Financial Controller and  
Company Secretary

Emma Chen

Advangen General Manager

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## Forward looking statements

This publication contains forward-looking statements that are subject to risks and uncertainties. Such statements involve known and unknown risks that may cause the actual results, performance or achievements of Cellmid to be materially different from the statements in this newsletter. Actual results could differ materially depending on factors such as the availability of resources, the results of clinical studies, the timing and effects of regulatory actions, the strength of competition and the effectiveness of the Company's patent protection. None of Cellmid Limited, or any of its affiliates or associated companies (or any of their officers, employees, contractors or agents) makes any representation or warranty as to the accuracy, completeness or reliability of the information in this newsletter, or the likelihood of fulfilment of any forward looking statement or any outcomes expressed or implied in any forward looking statements.