A perspective on Blue Biotechnology

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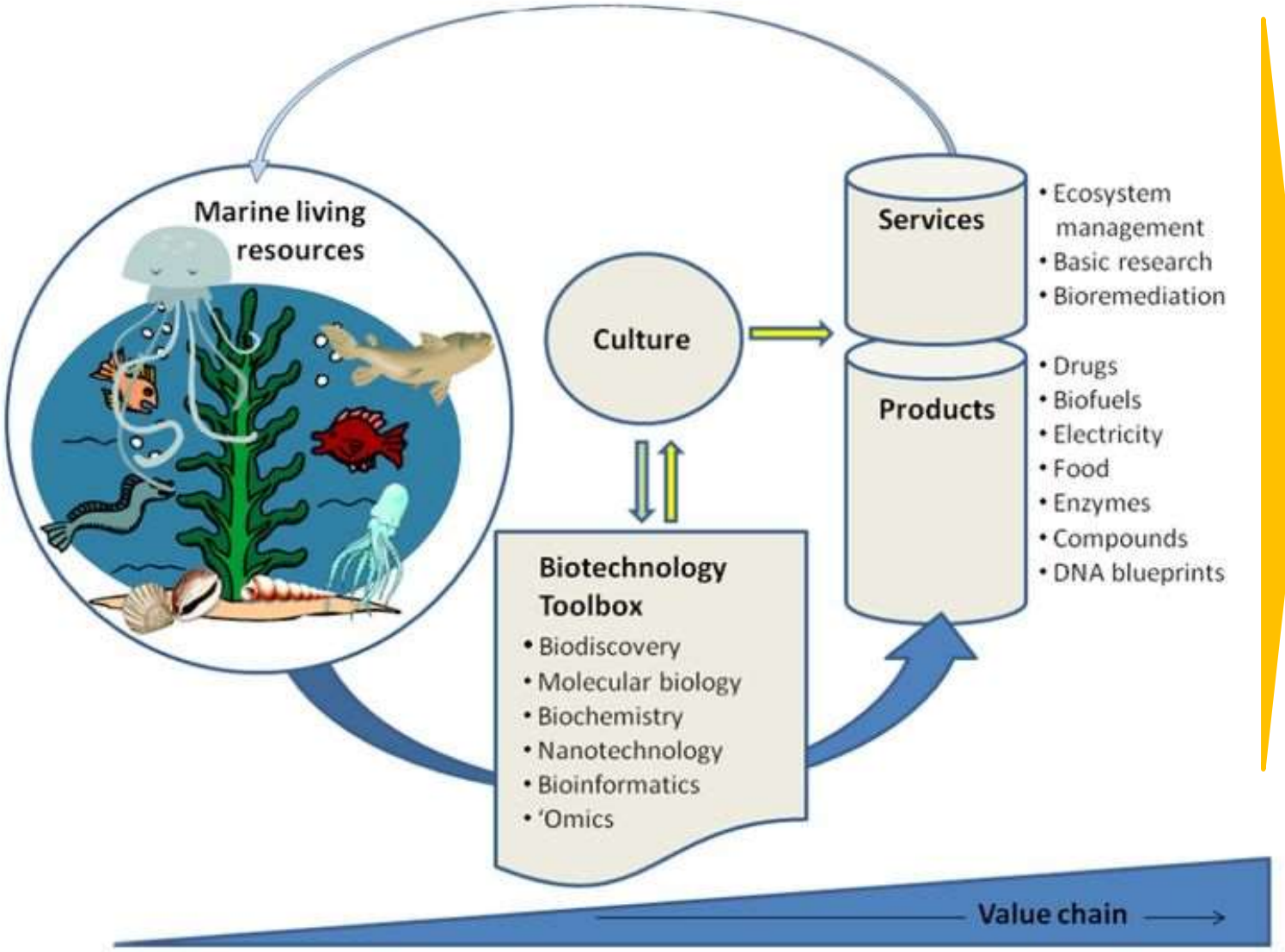
Founder & CSO. Jellagen Ltd.

Jellagen

What is marine biotechnology?



AN ENABLER TO INNOVATION & COMPETITIVE ADVANTAGE

Multi US$B markets

Marine biotechnology opens new market opportunities - cosmetics, nutrition and medical

Early commercial Marine “Blue” Biotech pioneers – founded <2007

marinomed

Aquapharm BIODISCOVERY

sealife PHARMA

ArcticZymes

GlycoMar

Nautilus Biosciences
Part of Croda International Plc

PharmaMar

MARINOVA
PURE SOURCE - PURE SCIENCE

nereus

Cyanotech

MARTEK
life enriched.

seagarden
NORTH ATLANTIC NUTRIENTS

Marine “Blue” Biotech Enterprise Creation

Historically (<2010)

- Marine Biotech historically was a difficult sector to raise finance – a lack of awareness by funders and historically few success stories to leverage off – An emerging “blue” technology and market sector.

- Dot.com crash 2001 / Financial crash 2008 – made access to finance even more challenging to develop blue innovation.

- Business models at that time – bioprospecting (pharma & functional ingredients), microalgal products (nutrition and cosmetics), industrial biotech (enzymes) application of marine resources – all considered financially **High Risk**

Today – the opportunity for Blue growth is exciting

- Emergence of marine biotech networks for “Blue biotech” entrepreneurs –

- Private financing environment is now changing with the emergence of marine biotech focused funds.

- To attract funding, new start-ups must offer a Unique Selling Point (an exciting and credible story), clear route to market and a credible team to deliver!

My entrepreneurial journey

- A passionate love of surfing introduced me to the oceans from a young age.
- Marine Biotech PhD (1996-2000), Heriot-Watt Scotland - Discovery of novel antibiotics from marine microbes to deal with multi-drug resistance (MRSA).
- During PhD, I met the Founder of Cambridge Life Sciences Plc – he gave me the entrepreneurial confidence
- Royal Society of Edinburgh Enterprise Fellowship (2000 – 2001) enabled me to make the transition to a commercial scientist creating the UK's first "marine biotech" business

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- My first company Aquapharm (Founded 2000) aimed to deliver my vision for marine natural product discovery – pharma/natural ingredients which led me to founding my second business Jellagen

This is where our story starts

- Founded in 2013 in Tenby on the Welsh Coast by **Prof. Andrew Mearns Spragg, a pioneer in marine biotechnology**.
- The idea? To use **the unique properties of collagen extracted from jellyfish for tissue engineering** – these living fossils are 600 million years old and densely populated.
- **Collagen Type 0** was discovered, and the intuition was right.

- Preclinical results have proven Collagen Type 0 superior to its mammalian counterparts in medical application – **a paradigm shift in collagen chemistry**.
- The foundational nature of Collagen Type 0 means that it has **incredible potential to work across multidirectional applications in regenerative medicine**
- Since 2015, Jellagen has secured >£8m from High-Net Business Angels, The Development Bank Wales and research grants.

Formulations & a growing IP portfolio

Can be supplied in a range of formulations:

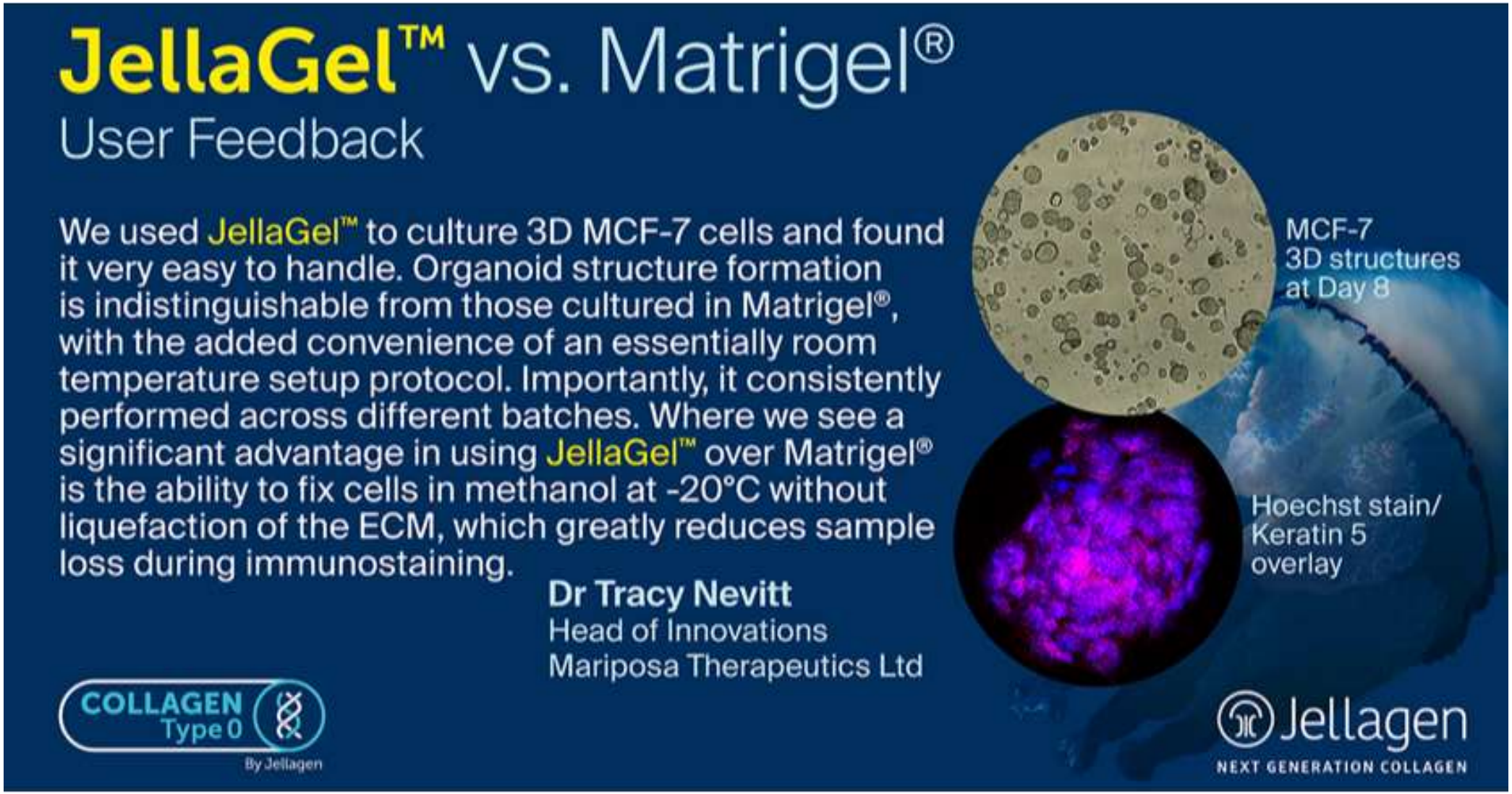
- Collagen Scaffolds
- Collagen Hydrogels
- Collagen Flowable Matrix
- Collagen Dressings
- Liquid Collagen

Products on the market - Introducing JellaGel™

JellaGel™ A Next Generation Collagen Type 0 Hydrogel for Cell Culture launched January 2021

- **Easy to use:** Can be formulated into a self-sustaining, cell-laden hydrogel at room temperature using our new JellaGel hydrogel kit.
- **Biochemically simple**: No unwanted/undefined growth factors or biological contaminants that could negatively influence the culture of cells. Other biological agents (e.g. growth factors) can be added to JellaGel to provide a specific biological response (e.g. differentiation).
- **Batch-to-batch consistent:** Offers improved research productivity allowing security of product consistency and reproducible results.
- **Non-mammalian & disease vector free:** Collagen Type 0 alternative providing consistent, repeatable results.
- **Inert Material:** Cleaner at miRNA level when compared to mammalian alternatives giving customers a cleaner cell culture with less off-target effects.
- **Phenol red-free**: Removes potentially undesirable biochemical effects.
- **ISO13485:2016:** Manufactured in a controlled and safe environment, fulfilling the expectations of customers and regulatory requirements.

Voice of the customer



What we offer

We are open to both academic and industry partnerships with forward-thinking organizations who want to benefit not only from our innovative, new collagen source, but also our expertise.

Our company is ideally suited to partner with companies looking for:

A materials supplier: Jellagen produces raw materials that can be integrated into our customer's production processes.

Customer-specific contract development (OEM): Jellagen's expertise can help optimize processes and device design to take advantage of our existing product properties. Our scientific team has extensive experience in collagen chemistry, collagen characterization, aseptic processing and cell therapies. This expertise can be used to develop collagen unique products, which include collagen gels, sponges, sheets and powders.

Partnerships: Jellagen manufactures products that are available for private label distribution/licensing by our customers.

¡Thanks for your attention!

bluehuman.cetmar.org