



New RVC Vaccinology and Cell Therapy Hub

The Royal Veterinary College (RVC)'s brand-new Vaccinology and Cell Therapy Hub is almost complete. Located at the Hawkshead Campus in Hertfordshire, the new facility has been designed with local industry in mind to bring SMEs and researchers together to tackle global problems in a modern environment. This project was made possible with support from the Hertfordshire Local Enterprise Partnership.

Professor Jonathan Elliott, Vice Principal for Research and Innovation at the RVC, spoke about the new Hub: "Operating in a high-quality environment that encourages scientists from different disciplines to exchange ideas is so important for the success of modern-day science. Receiving

the local Growth Fund Grant from the Hertfordshire LEP has enabled us to be more ambitious in our plans for the future; to design our facilities with interactions with local industry in mind, bringing SMEs onto our campus, tackling some of the world's most important challenges.

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WELCOME

I think it's fair to say that nobody predicted what 2020 had in store for us all. At LBIC we started the year planning a celebration of 20 years since the company was incorporated, but instead found ourselves working in unprecedented ways to keep things running smoothly for our clients.

Many clients have worked throughout the pandemic, and some have pivoted their existing research to address the urgent COVID-19 situation, including the development of a rapid virus test, an antibody test and a nascent preventive treatment for COVID-19 thanks to MicrosensDx, VirTus and SporeGen, respectively.

We can't predict the future, but we can keep playing our parts to make it better for everyone.

Lucy Garnsworthy, Editor

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The future of liquid handling.



Unibio to boost sustainable production of protein

Unibio has been selected as one of the FEED-X programme's top ten innovators for its Uniprotein® product. The FEED-X programme aims to replace 10% of conventional protein in feed production worldwide with sustainable alternatives that will significantly reduce feed-related environmental impacts. FEED-X is supported by the World Wide Fund for Nature (WWF), the United Nations Environmental Programme and other mission-aligned partners, such as IKEA and feed manufacturer Skretting.

Uniprotein is produced from methane using Unibio's U-Loop® technology, offering the opportunity to quickly manufacture animal and fish feed on a global scale. Uniprotein has a 70% protein content that can replace high-value proteins like super-prime fishmeal and highly concentrated soy products, especially in aquaculture feeds and as starter feed for piglets.

Marcela Navarro, CEO of Project X, said: "We are thrilled to be moving forward with such a talented innovator; this is a company

that has four of the UN's Sustainable Development Goals woven into their DNA. Unibio has demonstrated an incredible potential for sustainable performance and an inspiring commitment to making a positive difference on this planet.

The idea behind the Uniprotein product is incredible, and we are very much looking forward to seeing Unibio's potential unfold through FEED-X." www.unibio.dk

Low-waste, comfortable face mask production

MANEL TORRES, FOUNDER & MD, FABRICAN LTD

With the COVID-19 pandemic, the practice of wearing face coverings in public places is likely to endure. Disposable surgical-type masks do not offer a long-term solution to this change in consumer habits, particularly as widespread use will add to the global problem of landfill waste. Washable and



Fabrican Ltd sprayable fabrics for face masks: white, containing antimicrobial cationic surfactant and carbon black; black, containing activated charcoal; grey, with activated charcoal; transparent, to facilitate communication, containing antimicrobial surfactant.

reusable masks are a better solution, but traditional methods of manufacture require multiple parts and stitching: seams on such masks can be a weak point, as they often come apart with multiple uses and washings, impeding effectiveness.

Fabrican has come up with a method of manufacturing a one-piece, comfortable and fashionable face mask that can be stamped in the required shape and size, and has no need for separate elastics, ties or seams. The approach reduces costs for manufacturers, as the process can be fully automated. To reduce waste, off-cuts and masks that have reached the end of their useful life can be sanitised, re-dissolved, and re-sprayed to create new face coverings.

The soft, elastic fabric masks will facilitate consumer acceptance, being comfortable to wear, breathable, and readily available in a variety of colours and patterns, making seamless masks a sensible and civic-minded fashion accessory. www.fabricanltd.com



Funding for RVC's COVID-19 project

A project led by RVC researchers to reduce transmission of COVID-19 in traditional food markets in Bolivia and Peru has received £749,735 from the National Institute for Health Research (NIHR) and UK Research and Innovation (UKRI)'s Global Effort on COVID-19 Health Research call.

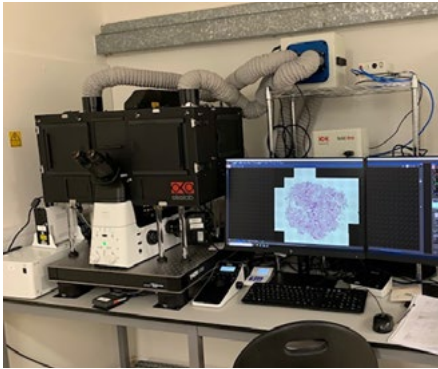
Food markets play a key economic and socio-cultural role in many countries worldwide but are prime sites for virus transmission. Along with partners from other institutions, the RVC researchers are creating strategies to reduce transmission of the virus in Sacaba, Bolivia and Huancayo, Peru – identified as priority targets due to a disproportionate impact from the virus and high national rate of COVID-19 deaths.

Working with local health services, the team, led by Javier Guitian, Professor of Veterinary Public Health at the RVC, will pilot a health promotion plan for market sellers and their families that includes early detection and follow-up of COVID-19 infections. Data gathered from these high-risk populations in the follow-up phase will provide further insights into COVID-19, such as risk of reinfection.

This project could help to develop effective risk mitigation programmes that also respect the role of traditional markets, which have been stigmatised in the current pandemic. By developing local capacity to protect populations with a high infection risk, the project could play an important role in the COVID-19 response while also helping inform strategies to tackle future public health emergencies. www.rvc.ac.uk/research/research-centres-and-facilities

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"In the future...scientists at the RVC will contribute to knowledge which advances cell therapy treatments for human patients by using veterinary patients as naturally occurring models of degenerative diseases of aging, such as arthritis, kidney disease and heart disease. In doing so, we will advance the treatments that we can provide to our veterinary patients, improving the lives of our pets, that provide so many



The Nikon Eclipse Ti2 Series Inverted Fluorescence Microscope System.

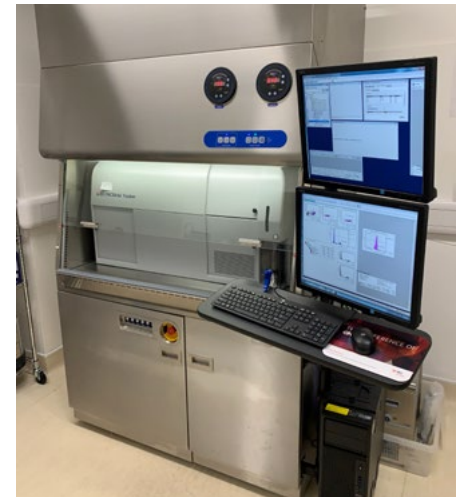


The BD LSRFortessa X-20™ Analyser can quickly measure cell-level detail with statistical significance.

people with so much pleasure and companionship."

The new Flow Cytometry Core Facility has already opened, to provide state-of-the-art imaging facilities for researchers, clinicians and contract workers. This will foster new and exciting research opportunities, to develop clinically relevant *ex vivo* assays, and to provide commercial partners with the infrastructure and expert knowledge to take work through from *in vitro* and *ex vivo* to *in vivo* in one location.

To enquire about opportunities at the Hub, contact Bevan McWilliam, RVC Business Relationship Manager: bmcwilliam@rvc.ac.uk
For more information on the Flow Cytometry Core Facility, visit www.rvc.ac.uk/research/research-centres-and-facilities/flow-cytometry



The BD AriaFusion™ can isolate identified populations, including rare cell populations.

SporeGen and Destiny Pharma to co-develop COVID-19 preventive treatment

SporeGen and Destiny Pharma have received an £800,000 grant from Innovate UK to develop SporeGen's SPOR-COV product as a novel, preventive treatment for COVID-19.

SPOR-COV is a nasal spray that administers a proprietary formulation of *Bacillus* bacteria, and preclinical models have shown it to provide 100% protection against influenza virus.

Unlike vaccines, SPOR-COV utilises the innate immune system with the aim of developing protection a few days after dosing. As an easy-to-use first line of defence, it has the potential to reduce COVID-19 infection rates and transmission significantly. The final product should be easily producible at high volumes and low



cost. As a very stable product, SPOR-COV could also be stockpiled almost indefinitely without the need for cold chain refrigeration. It could be made available globally as a cost-effective measure in the fight against COVID-19 as well as new COVID strains and other respiratory viral infections.

SporeGen and Destiny Pharma will share any costs and commercial returns from SPOR-COV and plan to complete a

preclinical programme within 18 months in order to commence the first human clinical trials. SporeGen's world-leading understanding of *Bacillus* bacterial spores will be combined with Destiny Pharma's expertise in pre-clinical and clinical drug development to progress the SPOR-COV project. The new project will also expand SporeGen's

existing IP protection of SPOR-COV.

Professor Simon Cutting, Chief Executive of SporeGen, said: "The SPOR-COV platform has already been shown to be effective against pandemic flu by targeting the innate immune system. As such, SPOR-COV potentially has value as a universal system for combatting other viral diseases such as COVID-19. If successful, we foresee a novel approach against COVID-19 and for future, similar pandemics.

"The SPOR-COV approach, unlike traditional vaccination, focuses on innate immunity and may not be impaired by new mutational variants...Prima facie our approach is simple and offers a potential new approach in the fight against one of the most serious diseases to afflict mankind".

<http://sporegen.com>

A quick guide to implementing a Health and Safety management system

BY DR SHURENE BISHOP SIMON,
DIRECTOR OF BISHOP SIMON LTD (A
HEALTH, SAFETY AND BIOSAFETY
CONSULTANCY)

Employers have a great deal to consider with regards to the corporate resources required to make a business successful: human resources, finance and IT are all key components. Health and safety is equally important because it is a legal obligation and it makes good business sense.

The Health and Safety at Work etc. Act 1974 places responsibility on employers to protect workers and others from risk to their health and safety. Breach of the Act is a criminal offence, and can lead to fines and a custodial sentence, depending on the potential for harm caused. One way to ensure compliance is to establish a suitable health and safety management system. Here is a simple guide to help you to get started, or to improve your current system.



Step 1

Plan Write a health and safety policy. This is a legal requirement for organisations employing five or more people. The policy must set out roles and responsibilities for staff, line managers and directors. The policy must also detail your aims and how performance will be measured.

It is very important to identify all the regulations that your organisation has a duty to abide by, for example COSHH or those covering genetic modification, and state the support in place to ensure compliance. You will, for example, require a Biological Safety Officer (BSO) to assist with genetic modification compliance.

Step 2

Do Implement your plan. This involves risk profiling by identifying activities that can cause harm, and what you will do to manage the risk of the harm occurring. You will need to document the steps taken to manage the risk. This is called a risk assessment, and it is a must-have. It is not sufficient to simply establish a way of doing things, it must be written down. For example, you have significantly minimised worker exposure to toxic vapours by installing a fume cupboard.

Further steps in implementing your plan include:

- (a) providing the appropriate tools and equipment that are properly maintained;
- (b) providing staff with the right information, instruction, training and supervision to ensure that they have the competency required to safely carry out their work;
- (c) creating forums for

worker involvement and access to competent advice.

Step 3

Check Find out how well you are managing your risks: be proactive. You can, for example, conduct regular inspections. This will cover a range of areas, such as premises, equipment and waste disposal. Reactive monitoring is important but must never be the sole monitoring practice. Reactive monitoring includes investigating accidents, incidents and near misses.

Step 4

Act Review performance and implement changes where needed. This includes, but is not limited to, acting on lessons learned during inspections, audits and accident investigations. It also entails reviewing policies and risk assessments to determine whether changes are necessary. This takes us back to Step 1, with the process being cyclic. This approach allows for continuous improvement and is a good way of ensuring your organisation is continuously improving and staying compliant.

Please note that this guide does not exhaustively cover the actions necessary to be compliant with the Health and Safety at Work etc. Act 1974, but is a snapshot of considerations to be taken into account to implement a health and safety management system.

If you would like additional input about how to ensure that your company is compliant with applicable legislations, then Bishop Simon is offering all LBIC clients a free 45 minute consultation. For a range of our services please visit: <http://bishopsimon.co.uk>

Please contact Dr Shurene Bishop Simon (info@bishopsimon.co.uk) for further information.

VirTus launches in-house COVID-19 antibody testing

VirTus Respiratory Research has developed a CE-marked and fully approved COVID-19 serology test (also called an antibody test) that determines whether an individual has previously been infected with SARS-CoV-2, even if they were asymptomatic. The test is registered with the MHRA, and has been validated according to PHE guidelines.

VirTus' antibody test detects levels of both IgM and IgG antibodies in blood samples and provides some indication of a person's susceptibility to future infection. The quantitative laboratory test gives a numerical value for the strength of antibody response (from zero to a maximum value of around three), to determine whether an individual has a weak, medium, strong or very strong antibody response to SARS-CoV-2 (or a negative test). The test

establishes a baseline to compare with future tests to monitor whether the antibody level changes over time.

The test has been shown to detect 100% of severe hospitalised cases and 86.9% of milder community cases, including asymptomatic people with a positive SARS-CoV-2 swab test. Most other tests have not been validated in community cases of COVID-19, nor in asymptomatic people with a positive SARS-CoV-2 swab test. In fact, in a head-to-head comparison on the same samples, the VirTus test is approximately 20% more sensitive than the Abbott or Roche tests, which are currently the main diagnostic tests in use within the UK.

Even for low level positives, the specificity of VirTus' test is 98.6%, rising to 100% for high to very high positives. According to VirTus, close monitoring of previous infections will be critical to:

- Understanding an individual's strength of immunity to SARS-CoV-2
- Helping employees to return to work more safely, with a better understanding of their own risk of

SARS-CoV-2 infection and the risk they may pose to others

- Gaining a better understanding of a workforce's susceptibility to infection
- Understanding the degree of immunity to SARS-CoV-2 within a community.

VirTus is currently servicing various GP practices around London, is performing a research study with the English Institute of Sport, and offers testing to individuals, businesses and other organisations via a home finger-prick sample kit or a professional phlebotomy service.

Individual results will normally be returned by e-mail within 1-2 days of VirTus receiving the sample in the laboratory. For companies, a comprehensive company report, indicating the percentage of employees with significant antibody levels, will be delivered within 10 working days.

VirTus is currently working to expand its tests to further identify and characterise the immune response to the virus.

To purchase a kit, visit shop.virtus-rr.com

Tecrea announces exclusive global animal healthcare partnership

Tecrea Ltd has entered into a multi-million-pound global deal with a top-ten animal healthcare company to develop new animal health medicines using Tecrea's innovative nanotechnology.

Tecrea's platform technology has the potential to enhance both new and old medicines for the treatment of many conditions across human and animal health. The partner company will be using the technology to create new medicines specifically within the animal health sectors.

Tecrea was founded in 2012 as a spin-out of the Royal Veterinary College (RVC), University of London, to empower researchers working in the life science and drug development field through innovation

in nanotechnology. Tecrea has developed the technology to create a unique range of cell and tissue delivery tools that are fully translatable from the lab to the clinic, with progress in human and animal health being made through strategic partnerships.

John Ridder, Tecrea CEO, says of the deal: "We are excited to be working on this substantial partnership with one of the world's leading animal health companies, to bring new drugs to market. This partnership allows for true medicines innovation in the field of animal health and we are delighted to be part of it"

Jonathan Elliott, Vice Principal for Research & Innovation at the RVC, says:



"It is hugely satisfying to see technology based on new knowledge, generated at the RVC, taking the next step on the path towards significant impact. We are excited at the very real prospect that over the coming years we will see product development based on our discoveries

benefiting the health and welfare of animals and the livelihoods of people throughout the world."

The Partnered global animal health company develops products and knowledge services to prevent and treat disease in food animals and pets in more than 90 countries. With a long heritage, they rigorously innovate to improve the health of animals and benefit customers, while fostering an inclusive, cause-driven culture.

More information can be found at www.tecrea.com

PharmaMedic Consultancy celebrates five years at LBIC

2020 marks the 5-year anniversary of PharmaMedic Consultancy (PMC®) becoming an LBIC client.

PMC provides medical consulting services to pharma and biotech companies both large and small, primarily based in the UK but also across both the US and Europe.

PMC's VirtualPharma Solution™ offers customers a flexible, cost-effective and expert approach to medical affairs. With decades of experience supporting a diverse portfolio of customers, PMC can complement an existing medical affairs team, or provide full medical and regulatory input throughout the product lifecycle.

PMC has built its solution on four key pillars

1. Flexibility

PMC's flexible solutions support clients from the first clinical trial application (CTA) through to trial start-up, and from the creation of advisory board materials to regulatory approval and product launch. PMC customers have access to a trusted network of consultants, and PMC can bring additional resources to support projects as required.

2. Expert Oversight

Pharmaceutical professionals with decades of hands-on and strategic experience lead PMC. Clients can be assured of specialist oversight and guidance from knowledgeable medical leaders, as well as practical, day-to-day operational support.

3. Collective Expertise

When working with PMC, customers will have access to the full depth and breadth of the network's combined expertise. The consultants' experience spans medical affairs, pharmaceutical, regulatory and product development across biopharmaceuticals, OTC, generics and medical devices. Working with a PMC consultant through the VirtualPharma Solution guarantees access to the team's collective knowledge, enabling PMC to bring a multi-disciplinary perspective to any challenge.



4. Knowledge Retention

PMC can seamlessly add or replace team members to meet operational needs or ensure compliance with regional legislation around working with contractors. Throughout, PMC will provide full knowledge retention – ensuring continuity for all projects.

Managing Director, Dr Malcolm Barratt-Johnson states: "My background and those of our consultants at PMC provides the perfect bank of expertise for those in Pharma and Biotech looking for help and support with regulatory advice, product launch expertise and general medical affairs support."

What PMC clients say

"The partnership we have with PMC and our consultant works exceptionally well. Our PMC consultant is highly experienced, and it's invaluable to be able to draw on their wealth of knowledge and expertise. While there isn't currently a sufficient volume of work to justify a full-time employee at the PMC consultant's level, we benefit from having someone of their exceptional calibre available to us." Olivia Marsh, Glenmark Pharmaceuticals.

Who does PMC help?

PMC helps organisations of all sizes, including virtual biotech start-ups, small and medium-sized biopharma establishing a presence in Europe for the first time, and large global biopharmaceutical companies. PMC also works with the growing number of biotechnology organisations spinning out of the thriving academic sector.

If you would like to discuss the opportunity to work with PharmaMedic as a consultant or if you would like to discuss medical affairs project requirements for your organisation or team, please email hello@pharmamedic.co



\$21M financing round to support Prokarium's microbial immunotherapy cancer treatment



Prokarium has announced the closing of a Series B investment round of \$21M to support its work developing novel immunotherapies and vaccines based on its engineered microbial platform.

"We are very pleased with this strong financial support and with the global networks our investors bring," said Dr Ted Fjallman, CEO of Prokarium. "The funds will support the development efforts of our microbial immunotherapy for the treatment of non-muscle invasive bladder cancer, which we plan to advance to the clinic by 2022, as well as the expansion of our pipeline across multiple solid tumours. This financing, together with our recently

announced partnership with the Wellcome Trust for funding our clinical studies of Entervax, positions Prokarium well to realise the potential of our microbial immunotherapy platform."

Non-muscle invasive bladder cancer (NMIBC) accounts for 400,000 new cases per year worldwide and is currently lacking innovative treatments. Prokarium aims to disrupt the market with their engineered *Salmonella* that boosts the natural anti-tumour immune response as well as through direct tumour killing.

The investment was led by Korea Investment Partners (KIP) with the participation of British Business Bank

Future Fund, Flerie Invest and Riyadh Valley Company. Sangwoo Lee, Managing Director of KIP, said: "Prokarium's approach of developing microbial immunotherapy that stimulates innate immunity and modulates the tumour microenvironment is very exciting and has the potential to transform cancer treatment across the world."

In addition, Hyam Levitsky, MD, will join Prokarium's Board of Directors, bringing over 30 years' experience of internal medicine, oncology and immunology research.

www.prokarium.com

Rapid COVID-19 diagnostic test from MicrosensDx

MicrosensDx has developed a test for COVID-19 that works in just 25 minutes, with high accuracy and requiring only routine laboratory equipment. Already in the final stages of clinical validation, the test contains an integrated virus inactivation step to prevent exposure of the operator to potential infection. Over 8,000 tests per week were administered in a recent programme in Cumbria with BAE Systems. MicrosensDx's COVID-19 test uses a magnetic particle viral RNA preparation step optimised to work with the built-in loop-mediated isothermal amplification (LAMP) detection method. The simple

method means that the test can be carried out in a range of settings including care homes, airports and sports venues.

MicrosensDx CEO, Dr Mark Street-Docherty, said: "Our COVID-19 technology...works up to three times faster than the widely available PCR based methods, is easy to use and non-invasive.

"We've proved it works on a large scale over the last few months in Cumbria and

are now working with our partners to ramp up production. The extraction element of our test [has] received CE accreditation, with our LAMP technology due to receive its CE mark imminently. We're now in early discussions to supply commercial operators and health authorities across Europe in the coming months."

www.microsensdx.com



Virtual tenancy offers flexible London base

£600
for the first six months*

For companies looking to establish a London base, it is easy to think that a physical office is required. However, many companies find it simpler to take on a 'virtual' tenancy at LBIC, giving access to meeting room space when needed for important face-to-face meetings, but without the commitment and setup required with dedicated office space.

LBIC's experienced team has developed the virtual package to suit the varied needs of life science companies of all sizes.

Benefits of an LBIC Virtual tenancy

- A Central London address less than 10 minutes' walk from the international transport links of St Pancras International station
- One-year complimentary Gold membership of One Nucleus, the international membership organisation for life science and healthcare companies
- Discounted client rates on meeting rooms, catering and video conferencing facilities
- A dedicated telephone line answered in the client's name and redirected as needed
- Post collection and redirection
- Courier bookings at client rates
- Business Support Network to assist with doing business in the UK
- Access to RVC equipment and facilities, including the stunning Lightwell café
- Visible profile within LBIC and through our marketing and communications
- Option to cancel at any time, with just one month's notice period

The set-up process is quick and straightforward

Contact us at lbic@rvc.ac.uk or call +44 (0) 20 7691 1122 today to enquire about becoming a Virtual client.

* Additional charges may apply for certain services. A full list of charges can be supplied on request. Prospective clients will be subject to due diligence checks by LBIC management. Introductory rate is excluding VAT.

Would you like to feature in our newsletter?

If you would like to contribute to a future issue of LBIC News, contact **Lucy Garnsworthy** on +44 (0) 20 7691 0982 or email lbic@rvc.ac.uk

Contact us

LBIC has been supporting life sciences companies since 2001. Today we host more than 50 companies, ranging from entrepreneurial start-ups to more established UK companies and overseas subsidiaries from Europe, North America and Asia Pacific. The Centre is owned and operated by the prestigious Royal Veterinary College, one of the independent Colleges of the University of London.

The Centre is a 10-minute walk from St Pancras International for Eurostar services and The Francis Crick Institute.



Our management team comprises:

Dr Ken Larkin
Chief Executive

Janette Richardson
Operations Manager

Lucy Garnsworthy
Communications Manager

For further information, or to enquire about our services, contact:

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Innovation Centre

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