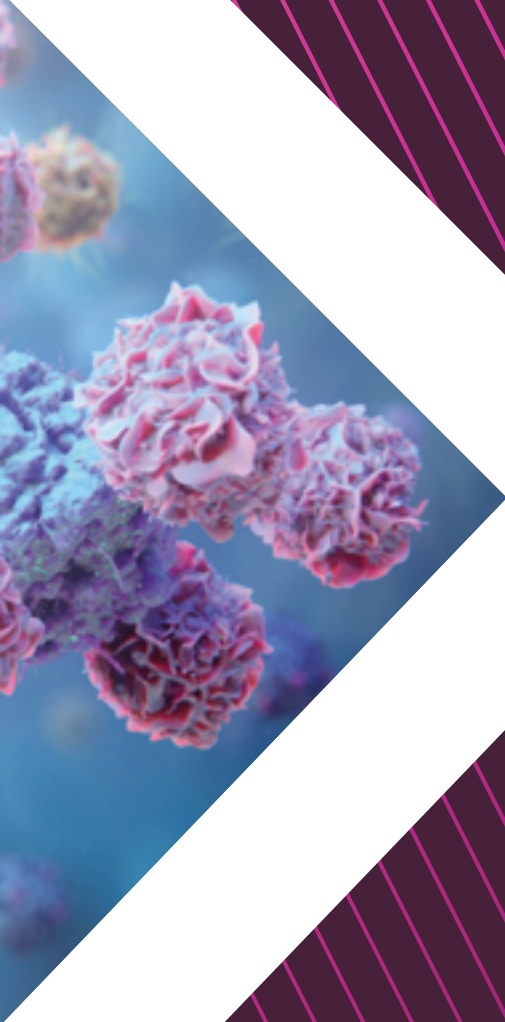




UK
Board
of Trade



Life sciences:

What's next for this
top UK sector?

A portrait of Kemi Badenoch, a Black woman with long, dark braided hair, wearing a white button-down shirt and a light-colored skirt with a wide, horizontally striped waistband. She is seated at a wooden desk, looking slightly to the right of the camera with a gentle smile. In the background, a Union Jack flag is visible on the right, and a framed picture hangs on the wall to the left. A large, semi-transparent purple graphic element is overlaid on the bottom left of the image, containing the text.

1.

Foreword

Kemi Badenoch

Secretary of State for
International Trade and President
of the Board of Trade

“ As President of the Board of Trade, I am delighted to welcome this reflective paper, which looks at the trade and investment position of the sector now and how its future growth might be supported.”

As Secretary of State for International Trade, I have the privilege of meeting so many dedicated businesses and individuals who are passionate about what they do. Such passion is the lifeblood of the UK life sciences industry. It is an industry whose very purpose is to improve how we live and how long we live. It is a sector that has people at its heart: exploring, testing and creating ways in which people can lead happier, healthier, and purposeful lives. It is a sector, that through the pandemic, has come sharply into focus in recent years.

In the UK, we have a prestigious life sciences heritage to be proud of, dating back to the late eighteenth century when British doctor Edward Jenner developed the first vaccine against the contagious disease, smallpox. The UK has continued to build on this history of innovation and entrepreneurship, and today ranks 4th on the Global Innovation Index, playing a key role in global science endeavours⁰¹.

The Life Sciences Vision (LSV)⁰² published by the Government last year outlined the overall ambition for the sector. It is my department's responsibility to support the exporting efforts of the life sciences sector and to attract inward investment into it.

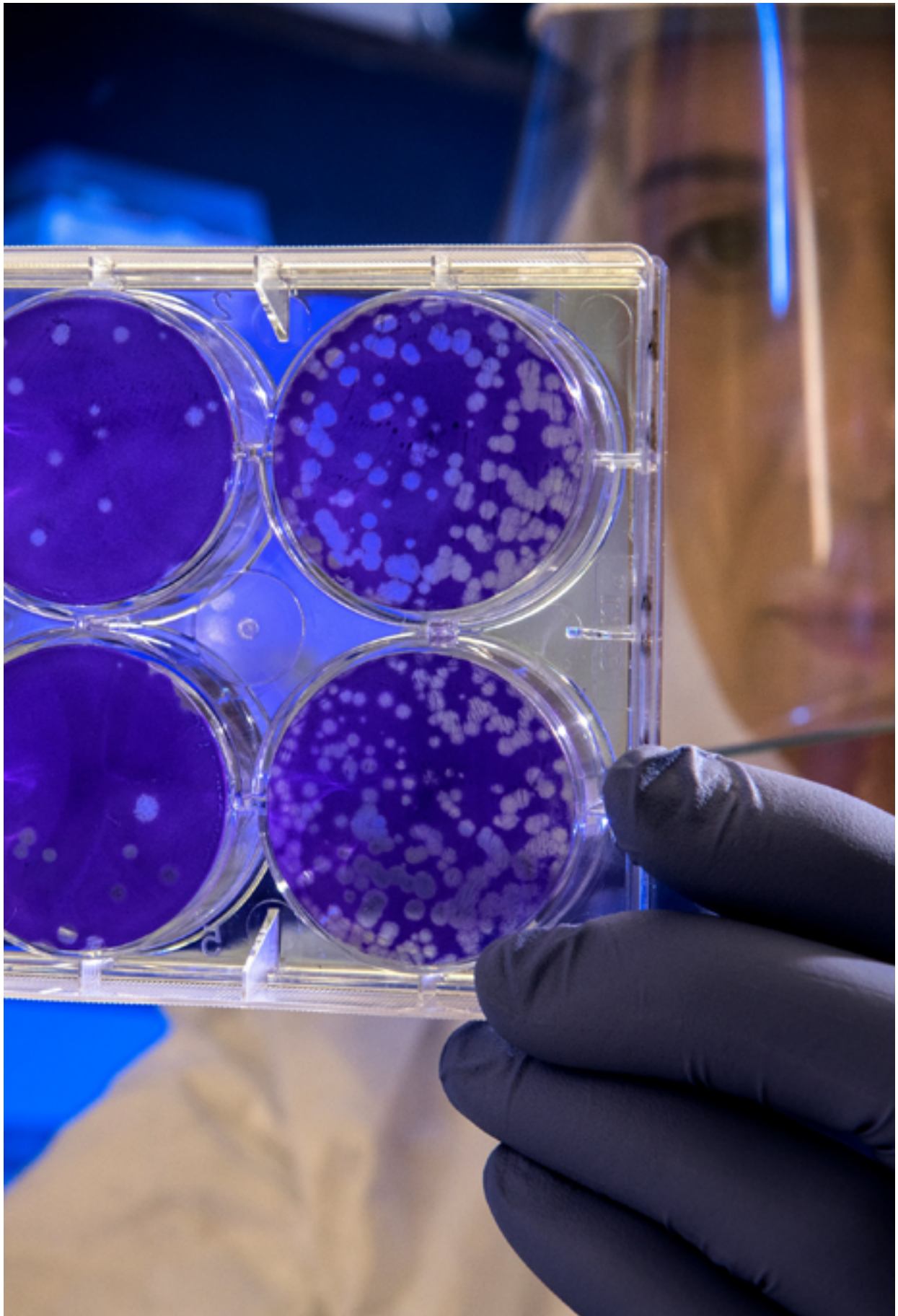
As President of the Board of Trade, I am delighted to welcome this reflective paper, which looks at the trade and investment position of the sector now and how its future growth might be supported. It's about maximising use of what we have to maintain the momentum of the leading role that the UK has earned through the pandemic.

Life sciences is a dynamic, collaborative and forward-thinking sector, fusing science, innovation and technology to help solve global healthcare challenges of our time. It makes a vital contribution to consolidating our role in the world as a science and technology superpower and helps everyone in the UK and across the world to stay safe and healthy and enjoy a better quality of life.

Kemi Badenoch

01 <https://www.globalinnovationindex.org/analysis-indicator>

02 <https://www.gov.uk/government/publications/life-sciences-vision>



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2. The Board's role

The Board of Trade is a government body that has existed in various forms for almost 400 years – even before the days of Adam Smith and David Ricardo. Its purpose is to raise awareness of the benefits of international trade, campaign globally for free and fair trade and work with international counterparts to build a consensus for open markets and fight protectionism. It works alongside, but is separate from, the Department for International Trade.

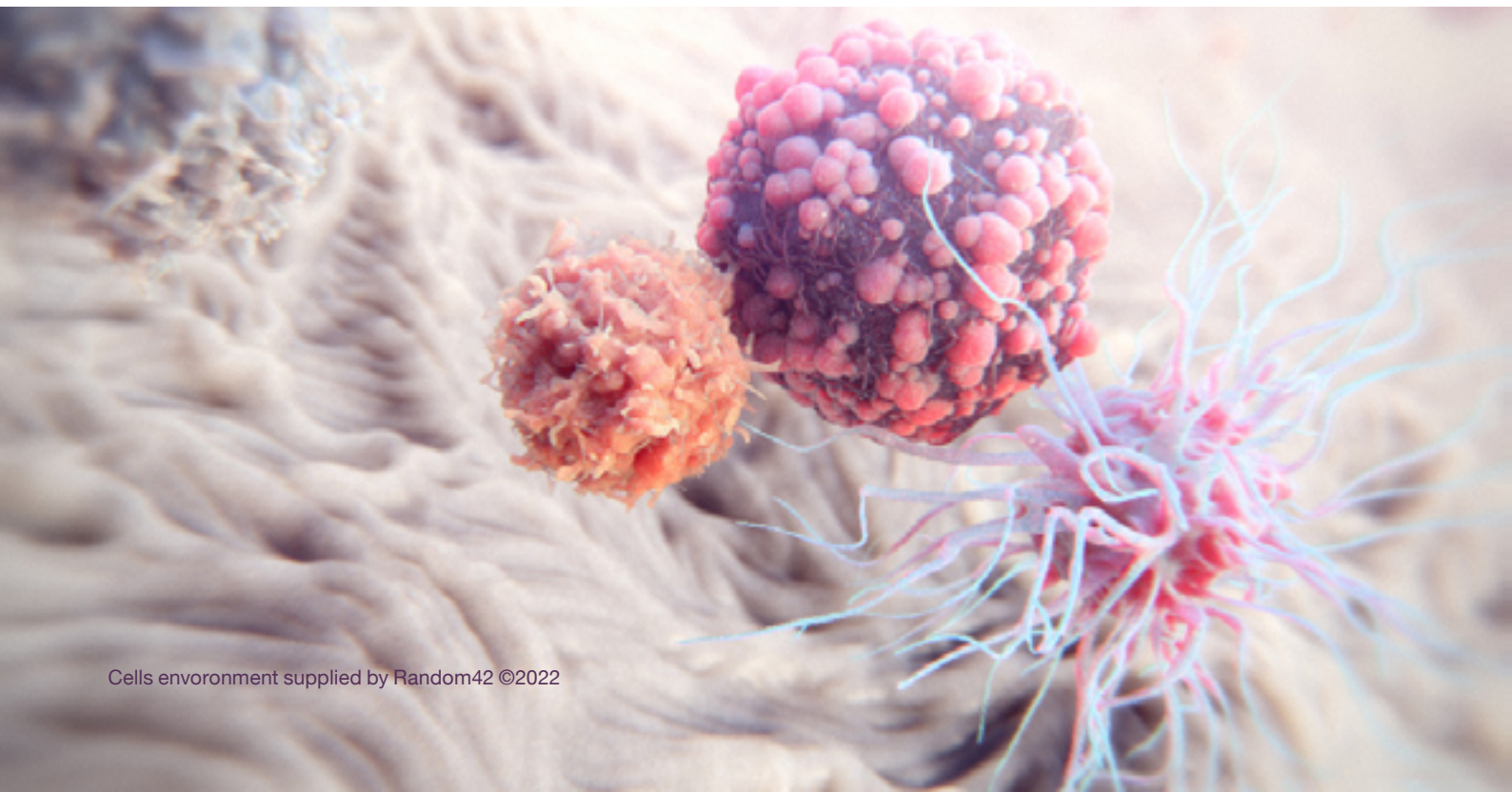
The President of the Board of Trade is the Secretary of State for International Trade. The Board is supported by advisers to the Board of Trade, who are drawn from academia, business, and government. They are independent and are appointed on one-year non-remunerated terms.

The Board meets quarterly at locations across the UK's region. It produces reports and papers on important trade issues, the publication of which is timed to coincide with Board meetings. This is the fifth quarterly publication of the Board of Trade.

3. Scope of this paper

The Board's publications are intended to bring new thinking to, and inform debate on, matters of UK trade policy. The government will consider the recommendations of Board of Trade papers but is under no obligation to pursue them and this paper does not reflect government policy. Board of Trade publications often include reflections from the Board's advisers which may differ from existing government policy. Where these are included, they are attributed to the adviser directly.

This is the fifth
quarterly publication
of the Board of Trade.



4. Board advisers

The President of the Board of Trade is the Secretary of State for the Department for International Trade.

The 15 advisers are:

- Secretary of State for Scotland
- Secretary of State for Wales
- Secretary of State for Northern Ireland
- Minister for Investment
- Minister for International Trade
- Minister for Trade Policy
- Minister for Exports
- Karen Betts
- Emma Howard Boyd CBE
- Rt Hon Patricia Hewitt
- The Hon Tony Abbott
- Lord Hannan of Kingsclere
- Michael Liebreich
- Dr Linda Yueh
- Rt Hon the Lord Mayor of the City of London, Nicholas Lyons



5. Introduction

Life sciences is a global endeavour and yet the UK has played an outsized role in delivering its benefits to the world. In 2021, the UK life sciences sector was third in the world for number of inward investment projects⁰³ with medicinal and pharmaceutical products in the top 3 goods exported from the UK⁰⁴.

The life sciences industry is high-tech, innovative and highly diverse, spanning pharmaceuticals, medical technology (devices and diagnostics) and medical biotechnology, and has applications across many other sectors.⁰⁵

Today its profile is higher than ever. The start of the pandemic saw the world racing to discover and make vaccines, with the UK leading. From sequencing the virus genome to developing the first diagnostics, treatments, and antivirals, to setting up the world's largest and fastest clinical trial. The UK was also the first in the world to approve and administer a Covid-19 vaccine. The government's 2021 publication of the Life Sciences Vision⁰⁶ recognised the importance of

the sector and the opportunity to capitalise on the UK's reputation. It outlined how the sector might contribute to a range of healthcare missions, such as: neurodegeneration and dementia; cancer early diagnosis and treatments; novel vaccine discovery, development, and manufacturing; cardiovascular diseases and its major risk factors, including obesity; respiratory disease; ageing; mental health, with addiction recently added.⁰⁷

However, the pandemic turbulence of the last couple of years has unsurprisingly had other impacts, particularly on the trade and investment environment. International competition remains tough. The sector's opportunities, elevated profile and global demands has meant that governments around the world are growing their own domestic life sciences industries to increase their exports and position themselves as investment destinations.

This paper examines the challenges and opportunities for the Department for International Trade (DIT) to maximise the UK's global position to increase inward investment and exports.

03 Office for life sciences Life Science Competitiveness Indicators 2021

04 ONS UK trade August 2022 <https://www.ons.gov.uk/releases/uktradeaugust2022>

05 <https://www.gov.uk/government/statistics/bioscience-and-health-technology-sector-statistics-2020/bioscience-and-health-technology-sector-statistics-2020#fn:5>

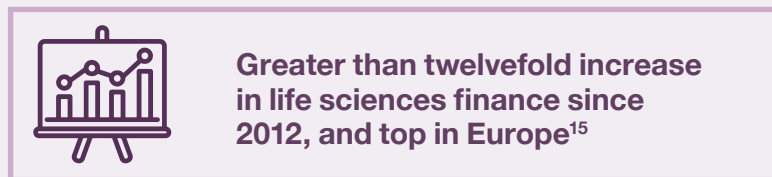
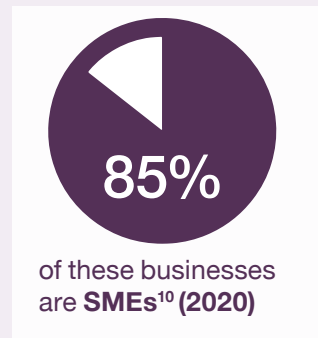
06 <https://www.gov.uk/government/publications/life-sciences-vision>

07 <https://www.gov.uk/government/publications/life-sciences-vision/life-sciences-vision-html>



6. UK life sciences: Today's trading and investment environment

6.1 Life sciences by the numbers



08 <https://www.gov.uk/government/statistics/bioscience-and-health-technology-sector-statistics-2020/bioscience-and-health-technology-sector-statistics-2020>

09 <https://www.gov.uk/government/statistics/bioscience-and-health-technology-sector-statistics-2020/bioscience-and-health-technology-sector-statistics-2020#fn:5>

10 As above

11 As above

12 DIT FDI Markets Extract (2021)

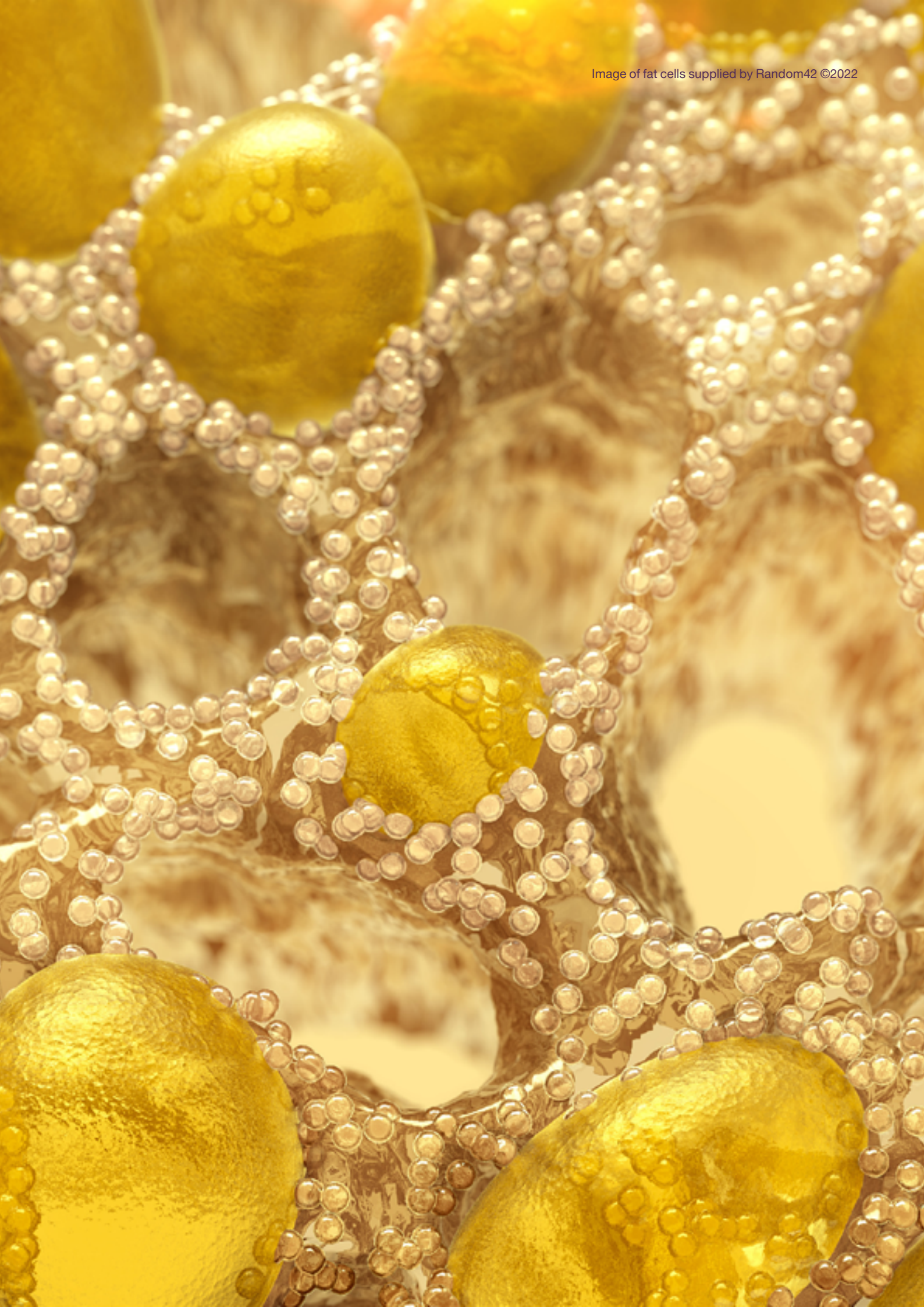
13 HMRC Overseas Trade Statistics August 2022 <https://www.gov.uk/government/statistical-data-sets/uk-overseas-trade-in-goods-statistics-august-2022-import-and-export-data>

14 HMRC Overseas Trade Statistics August 2022 <https://www.gov.uk/government/statistical-data-sets/uk-overseas-trade-in-goods-statistics-august-2022-import-and-export-data>

15 <https://www.gov.uk/government/publications/life-science-sector-data-2022>

16 <https://www.gov.uk/government/publications/life-science-sector-data-2022>

17 Times Higher Education World University Ranking – life sciences (2022)



6.2 Inward investment environment

Investment into the UK life sciences sector is important not only for wealth creation but for our nation's health and wellbeing. As seen during the pandemic, high-quality investment helped drive innovation, which in turn cuts the costs of treatment and medicines, improves healthcare outcomes, and delivers greater resilience. And the UK is a great place to invest. It is highly attractive to inward investors and has a strong track record of attracting world leading investment and talent. Unique to the UK is the "triple helix" combination of the NHS, academia and the research base, and industry. This collaboration across the life sciences sector helps to drive innovation, making the UK an attractive place to develop and launch products into the NHS, and generate evidence base, helping to open new global markets.

The UK ranked 3rd globally (behind the USA and Germany) in 2021 for volume of FDI projects won, and 2nd for FDI-related capital expenditure¹⁸.

The value of estimated inward life sciences FDI in the UK was £1.9bn in 2021, behind only the USA in terms of value. 2021 marked a second year of substantial increase in FDI in the UK since 2019 when the value was £574m, noting these figures can be highly volatile year-to-year.¹⁹

Current life sciences investors into the UK include the US, India, Europe, Israel, Japan, Australia, and South Korea. The UK has signed Free Trade Agreements with Japan, Australia, and South Korea²⁰. There are also further opportunities for cooperation through negotiations with India, South Korea, Israel, and continued close working with the US, including through Joint Dialogues on the Future of Atlantic Trade. As the government looks to enhance the UK's investment environment, DIT's UK and global network will place even more focus on attracting the highest impact inward investment projects, both in terms of value, and aligning with the government's levelling up, net zero and R&D objectives.

DIT plays an important role in converting market opportunity into inward investment, actively working to attract R&D stage investments, as well as investments into onshore manufacturing and commercial operations, and encouraging investment to export. DIT supports and records

both new investments and expansions and has had a considerable positive impact on inward investment in the life sciences sector, working alongside the Office for Investment (OFI).

Case study

LabCorp Drug Development (US)

LabCorp Drug Development (US) is expanding in Leeds, developing a new clinical pharmacology site adding 30% capacity to their operations. This will be in the heart of the emerging economic development zone in Temple, Leeds. A fit-for-purpose facility, it is intended to improve standards for clinical conduct and volunteer engagement. With the emphasis also on refurbishment rather than rebuilding, embodied carbon emissions (otherwise generated by demolition and the production and transportation of new construction materials) have been reduced. This investment will expand the Leeds clinic bed capacity by over 30%. The exciting combination of talent and innovative design will support efficiencies and enhance collaboration, offering significant benefits to clients and volunteers.

6.3 Exporting outlook

As set out in the UK's 2021 Export strategy: Made in the UK, Sold to the World²¹, the UK has potential for high growth in exports of both goods and services in the life sciences sector; exports which help provide solutions to ease the global burden of chronic diseases and conditions.

The NHS alone has an annual budget that exceeds £100 billion.²² It spends approximately £16 billion a year on drugs and is reliant on both domestic and imported products.

Medicinal and pharmaceutical products are in the top 3 goods exported from the UK, with the UK a net exporter of medicinal and pharmaceutical products (worth £20.3 billion in 2021).

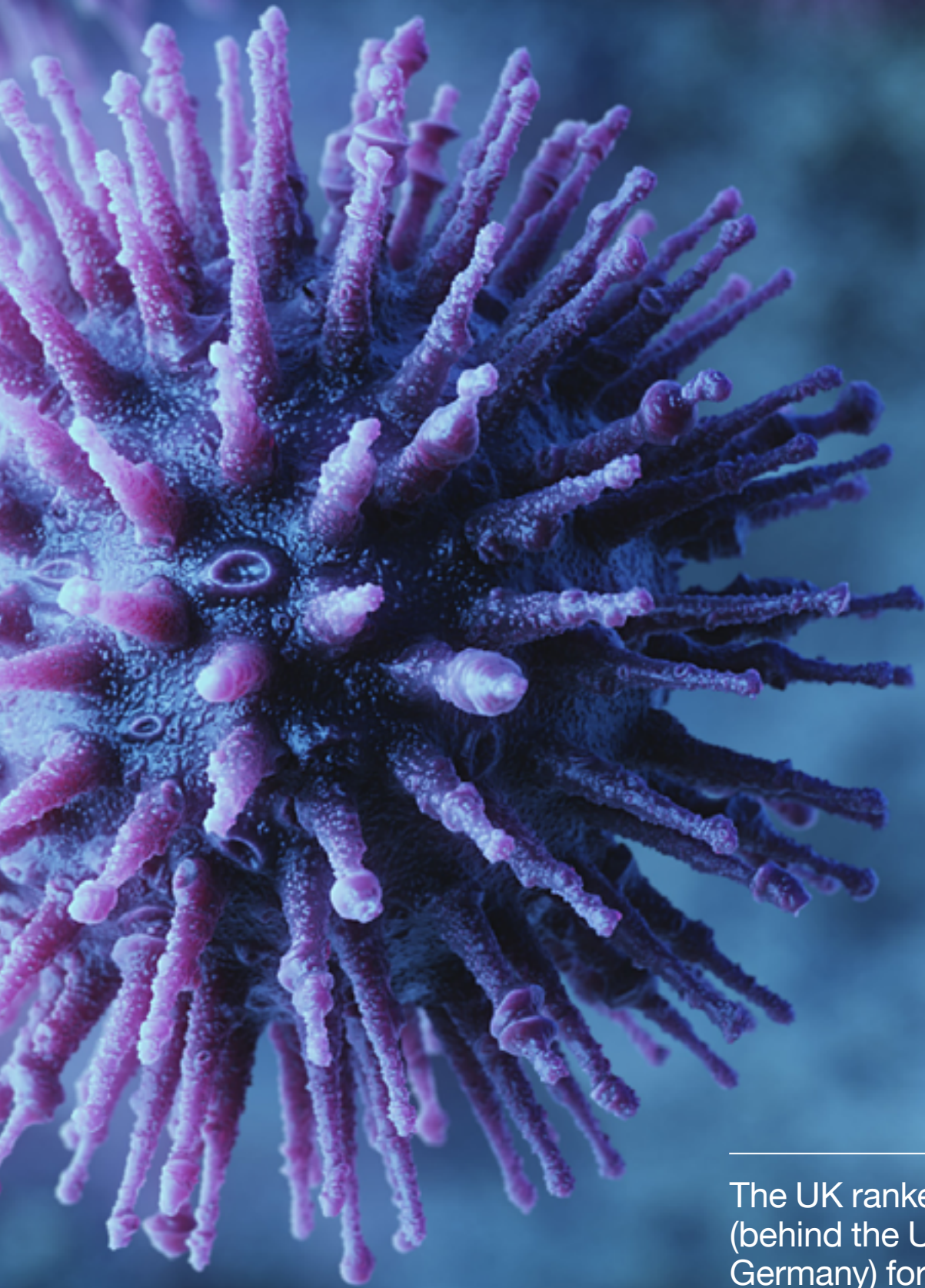
¹⁸ <https://www.gov.uk/government/publications/life-science-sector-data-2022/life-science-competitiveness-indicators-2022>

¹⁹ <https://www.gov.uk/government/publications/life-science-sector-data-2022/life-science-competitiveness-indicators-2022>

²⁰ <https://www.gov.uk/government/publications/life-science-sector-data-2022/life-science-competitiveness-indicators-2022>

²¹ <https://www.gov.uk/government/publications/export-strategy-made-in-the-uk-sold-to-the-world>

²² <https://www.kingsfund.org.uk/projects/nhs-in-a-nutshell/nhs-budget>



The UK ranked 3rd globally (behind the USA and Germany) for FDI projects won in the sector, and 2nd globally for FDI-related capital expenditure in 2021.

There has been a general decline, however, in the UK's manufacture of life science products. Between 2011 and 2020, turnover decreased by £7.7 billion in real terms (albeit partially offset by increases in turnover for supply chain and services). Exports growth has also been correspondingly affected.

Between 2014 to 2019 the Compound Annual Growth Rate for UK life sciences exports was 2%. From 2016 to 2021, this reduced to - 3% (see Figure 1 and analytical appendix for explanatory notes).

The latter may be a result of wider global macroeconomic events and changes, such as COVID-19 in 2020 and 2021, and competitor countries concentration on increasing domestic manufacturing which may have potentially had an impact. Therefore, the 2021 figures may be temporary and not truly representative of underlying trade relationships.

Figure 1. UK life sciences exports - Compound Annual Growth Rate 5-year trends²³:

	Base year exports (in billions)	Final year exports (in billions)	5 year CAGR
2014 - 2019	£23.7	£26.0	2%
2016 - 2021	£27.6	£24.0	-3%



The world over, health systems are also recovering from the pandemic and moving towards a new norm, where the needs of markets and their buying patterns are changing.


Thus, whilst the US has consistently been the UK's top individual export market over the last 10 years, exports to the EU, and the US have decreased over the last five years (Figure 2 below).

²³ <https://www.gov.uk/government/collections/uk-overseas-trade-statistics-and-regional-trade-statistics>

Figure 2. UK's Top 20 life sciences export markets 2011-2021²⁴

Country	2011 Rank	2021 Rank	Total UK exports (£ms) over 2011-2021	Recent trend: 5 Year CAGR (2016-21)
United States	1	1	65,295	-6%
Belgium	10	2	11,640	26%
Germany	2	3	36,262	-11%
Netherlands	4	4	22,026	-4%
China	9	5	12,995	11%
Ireland	7	6	11,546	11%
France	3	7	15,137	-2%
Switzerland	12	8	5,130	4%
Australia	11	9	5,871	8%
Japan	8	10	7,812	-4%
Italy	6	11	9,538	-14%
Spain	5	12	10,793	-17%
Canada	15	13	5,247	-3%
Russia	16	14	3,238	2%
Saudi Arabia	19	15	3,097	2%
Turkey	13	16	2,668	-2%
UAE	20	17	2,400	-4%
Brazil	18	18	3,008	-9%
Sweden	17	19	2,972	-9%
Poland	14	20	2,971	-13%

²⁴ <https://www.gov.uk/government/collections/uk-overseas-trade-statistics-and-regional-trade-statistics>



Nevertheless, as Figure 2 shows, the UK has improved its exports position in markets such as China, Switzerland, and Australia. Also, as outlined in the UK Export Strategy, rapid economic growth in the Indo-Pacific region is shifting the world's centre of economic gravity eastwards.²⁵ Cognisant of this, the UK's FTA programme continues to develop ever closer trading relationships with countries around the world, which presents a significant opportunity for the future growth of the life sciences sector.

DIT embraces the negotiation of Free Trade Agreements that can open trade and investment pathways and honour its multilateral commitments to improve the channels and conditions for trade. It takes a proactive and targeted approach to reduce costly non-tariff barriers, improving adherence to international standards, thereby paving the way to increased exports and investment.

²⁵ <https://www.gov.uk/government/publications/export-strategy-made-in-the-uk-sold-to-the-world>



7. UK life sciences: Tomorrow's reinvigorated business environment

With the UK's internationally acclaimed response to the COVID-19 pandemic, interest in life sciences to help solve many of our present – and future – healthcare challenges, is rising.

The UK has a unique chance to:

- **seize on its position as a science and technology superpower and vital contributor to solving future healthcare challenges**
- **showcase and support its vibrant industry**
- **leverage strong international relationships and the once in a lifetime opportunity to craft its own independent trade policy and regulation to create better conditions and channels for trade**

7.1 Redouble efforts to encourage R&D and manufacturing

The UK has an unrivalled science, research and talent base across UK universities with a national innovation infrastructure, genomics and data resources to accelerate R&D and attract researchers from around the world. From discovery to development, with more than 30

specialty networks working across all therapeutic areas to support commercially sponsored research, and R&D tax relief available, the UK has a lot to offer. The UK life sciences manufacturing sector is reputed for its high quality and standards of compliance, robust IP protections, strong regulation, access to research space, talent and funding, and an engaged investment community. Deep expertise in specialist areas, such as cell and gene therapies and genomics also create the right conditions to encourage manufacturing and investment to export.

DIT should continue to promote these strengths and amplify reach through strengthening fruitful partnerships, such as the collaborative approach established with the Office for life sciences (OLS).

The government also has various funds that support life sciences investments including the £60 million Life Sciences Innovative Manufacturing Fund (LSIMF). It is crucial that DIT optimises investment outcomes for the sector through existing initiatives and levers, ensuring there is flexibility and clarity for investors, to maximise the UK's attractiveness.

We know that the tax environment is a crucial consideration of any investment decision. Included within the Life Sciences Vision is a commitment to ensure that the UK remains a financially attractive location for R&D through the UK's competitive tax environment and generous system of tax reliefs benefitting the life sciences industry. In 2022, the government consulted on the UK's capital allowance regime, inviting views from industry on how it can best support business investment. Listening to the views of investors and understanding how to optimise the value of funding available should be considerations for DIT and wider government.

The freeports model will also allow new investors and future exporters to benefit from a range of customs measures, allowing imports to enter the Freeport custom sites with simplified customs documentation and delay paying tariffs. This means that businesses operating inside designated areas in and around the port may manufacture goods using these imports, before exporting them again without paying the tariffs and benefit from simplified customs procedures.

These and other government initiatives present a coherent and dynamic support framework that DIT should continue to employ to increase exports and attract inward investments, including those which are export oriented.

DIT should also call to action the global business community to gauge appetite to co-fund UK R&D priorities, support the NHS, improve innovation at R&D stages and support investment into onshore manufacturing. More manufacturing can lead to more exportable goods therefore wider global health and socioeconomic benefits for a global Britain.

Clinical trials are also a valuable form of mobile R&D investment, and during the pandemic, the UK demonstrated its ability as a world leader, delivering high quality clinical studies at unprecedented speed. DIT should continue to work across the life sciences ecosystem to support and promote the UK as a clinical research destination and to secure R&D investment, which in turn can accelerate innovations into the NHS.

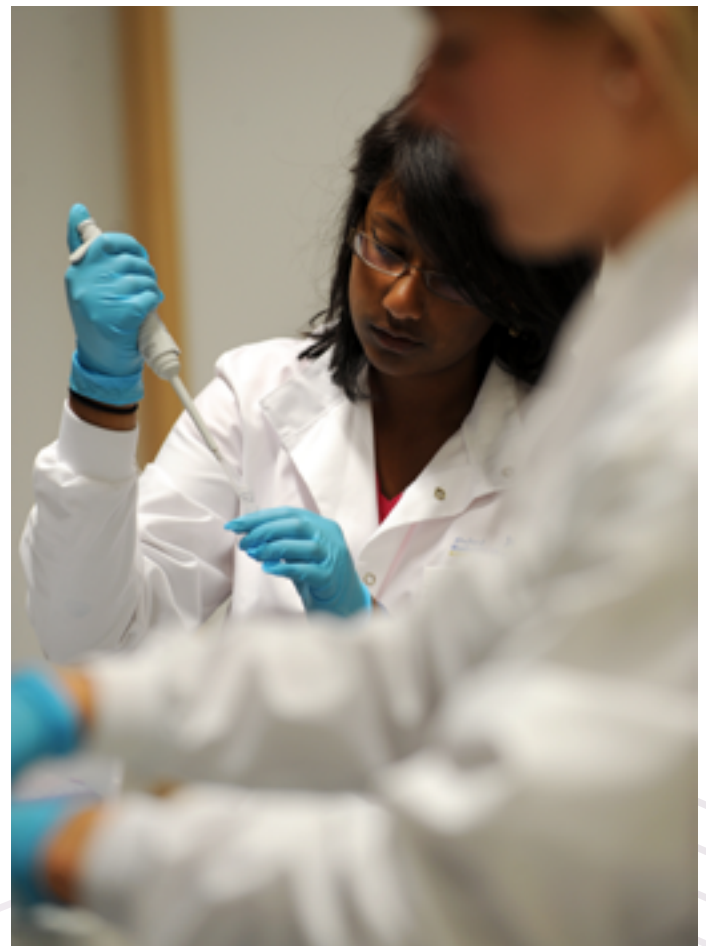
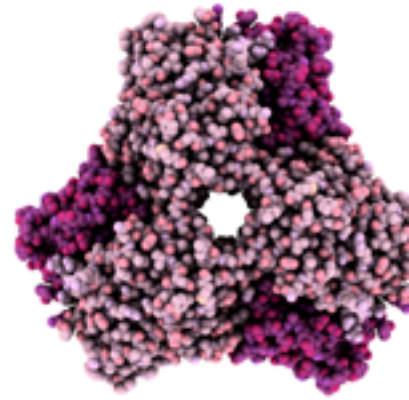
Partnerships with organisations such as the Office for Science and Technology Strategy (OSTS) and the

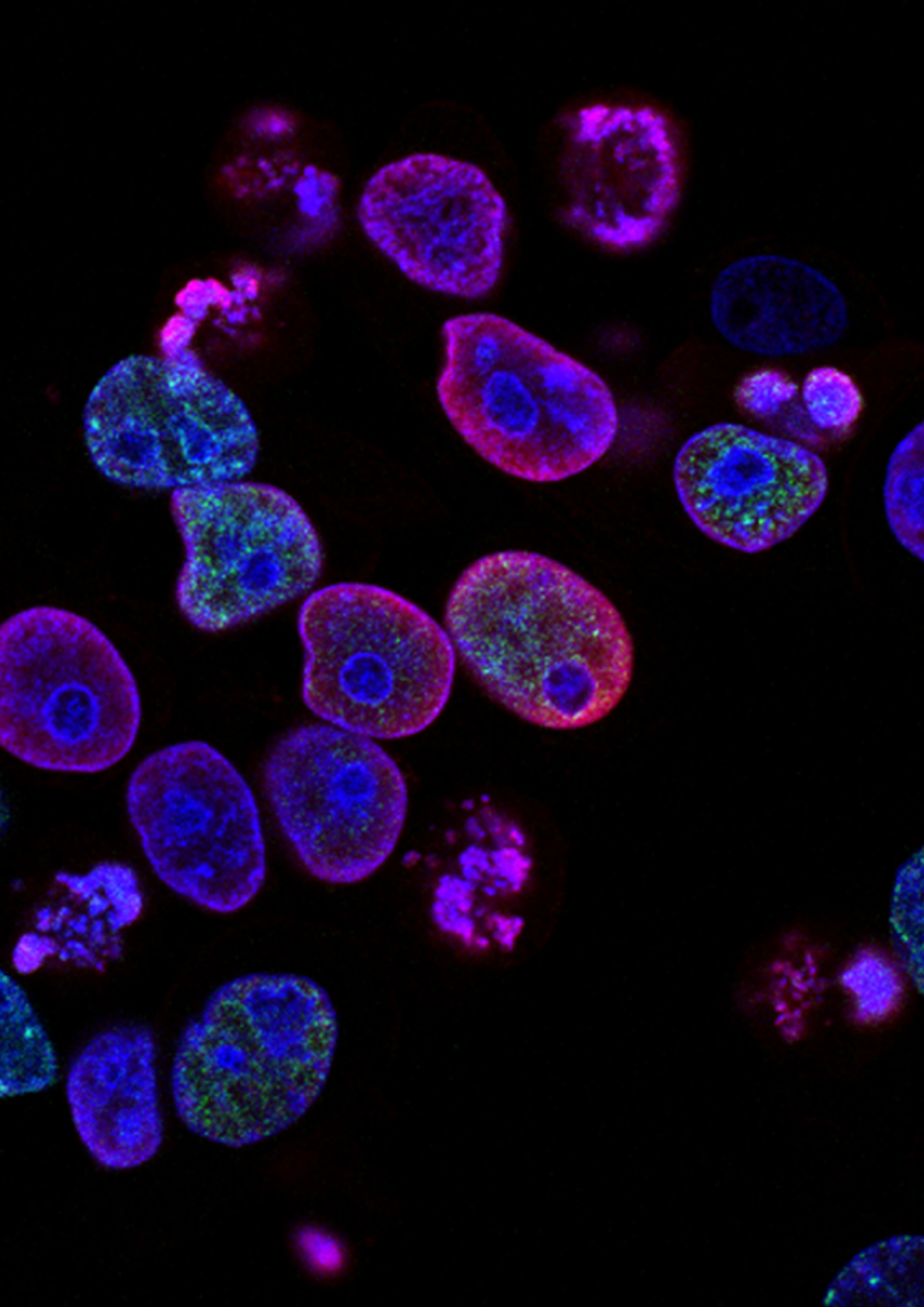


National Institute for Health and Care Research (NIHR) that funds and enables world-leading health and social care research are also vital. They help create the conditions for companies to innovate sell, invest and invest to export in the UK.

The UK's regulator, the Medicines and Healthcare products Regulatory Agency (MHRA), is globally renowned for its innovation and leadership– its efficient approval of COVID vaccines highlighted the agility of the UK regulatory environment.

This nimble and forward-thinking regulatory system, together with rich longitudinal data from the NHS, plus access to expert investigators and clinicians, underpins the unique research and clinical trials ecosystem offer of the UK.





7.2 Better target markets

With the global markets evolving and the UK capitalising on the impact of the pandemic and exit from the EU, it is timely for DIT to consider refreshing its approach to markets. International markets can be categorised into 3 core groups:

- **Maintain** - where the UK already has a strong track record and with consistent effort, we will be able to maintain or grow our market share, for example, the US.

Case study

In 2018, Texas Medical Center (TMC), the world's largest medical centre, partnered with DIT and British Consulate General Houston to create the UK-Texas BioBridge. This strategic partnership was created to advance innovation, enable research collaborations, and knowledge transfer. The BioBridge brings together government, academic and research institutions, hospitals, and innovation organisations to collaborate in 2 areas: 1) innovation and commercialisation and 2) research and education. To date, this partnership has facilitated over £100 million in export wins for British business, enabled ten UK companies' technology to be utilised in the United States, and ensured UK science and innovation is top of mind for leading hospital systems in the United States.

- **Rebuild** - markets that have been recently impacted but where with concerted effort the UK can regain ground, for example, Japan.

Case study

The UK-Japan Comprehensive Economic Partnership Agreement (CEPA) was signed in Tokyo in October 2020. The deal is the first agreement that the UK has secured that goes beyond the existing EU deal, with enhancements in areas such as digital and data. DIT analysis also shows that in the long run, the UK-Japan CEPA could increase UK-Japan trade by £15.7 billion and increase UK workers' wages by £800 million (compared to 2019 levels).

- **Grow** - markets that see a strong appeal in the UK, particularly our reputation for innovation, or FTA markets where with relationship building, we can seed the ground for future trade and investment. For example, the Gulf Cooperation Council (GCC).

Case study

In 2020, the UK-UAE Sovereign Investment Partnership (SIP) in life sciences, worth £800m, was delivered by DIT and the OFI. The SIP, which sits alongside HMG's £200m life sciences Investment Programme (LSIP), is a channel to provide a vital pool of patient capital for the life sciences sector. This will enable more UK businesses to scale, grow, and internationalise, boosting the opportunities available to the next generation of British life sciences talent.

In its life sciences export promotion and pursuit of inward investment, DIT should focus its international messaging on UK innovation, the UK's reputation for high quality, its high standards and compliance culture. It should take a UK-first message to market, working with subnational and sectoral stakeholders across the UK to leverage their expertise and networks to provide a more facilitated entry for inward investors.

Through better understanding its markets, DIT can evolve its business development and delivery approach drawing upon an array of tools, advice, and interventions to continue to refine, tailor and differentiate its offer (Figure 3).

Figure 3. Snapshot of support for export promotion and investment to export

UK TRADESHOW PROGRAMME	<p>Aimed at UK businesses that are currently exporting or thinking about exporting but are not currently doing so, so that they are able to exhibit and/or attend overseas trade shows/conferences.</p> <p>Businesses who apply successfully, if exhibiting, can receive training and/or a grant. If attending, they can receive contributions towards the costs of show entry, travel or accommodation as part of the package.</p>
UK EXPORT ACADEMY	<p>Gives businesses the know-how to sell to customers around the world by learning from experts in international trade.</p> <p>Designed to accommodate different levels of exporting experience, whether for those just starting to sell internationally or those looking to grow international sales further. The academy helps to overcome common challenges that businesses can face.</p>
GLOBAL SALES PITCH AND INNOVATION SHOWCASE	<p>A single, unified and compelling global sales pitch for why global life sciences companies should invest in the UK, with consistent messaging and a clear link to UK policy.</p> <p>In addition, DIT is piloting a UK life sciences Innovator Showcase that is selecting innovative UK exporters to feature in its international events, activities, and messaging.</p>
HIGH POTENTIAL OPPORTUNITIES	<p>Spread across the UK, the High Potential Opportunity (HPO) scheme, run by DIT, works with local partners and identifies opportunities to attract FDI investment into emerging, fast-growing sectors, regions and clusters.</p> <p>This is a targeted tool that will also support the Levelling Up agenda.</p> <p>There are currently 12 HPOs relevant to life sciences, more than any other sector, launched from 2020-22, in areas such as Precision Medicine in Glasgow, Medtech in Wales, Healthy Ageing in the Northeast of England and Cell and Gene Therapy in Hertfordshire.</p>
UK EXPORT FINANCE (UKEF)	<p>UKEF is the UK's export credit agency and a government agency, supporting exports for any size of company and across all sectors, from capital goods to services and intangibles such as intellectual property. It has a network of Export Finance Managers located regionally around the UK and international representatives in important overseas markets.</p> <p>For 2022/23, UKEF is committed to increasing its engagement in the life sciences sector.</p> <p>UKEF works with over 100 private credit insurers and lenders to help UK companies:</p> <ul style="list-style-type: none"> - win export contracts by providing attractive financing terms to their buyers; - fulfill contracts by supporting working capital loans; - get paid by insuring against buyer default.

DIT has also developed a range of detailed offers in areas such as in genomics, digital health, cell and gene therapies, clinical research, and engineering biology. These showcase UK areas of competitive strength and advantage, highlighting our expertise, talent and innovation. Designed for use in the UK and internationally, DIT should continue to target and tailor these offers, identifying relevant and priority markets.

Examples of international offers

- **World Leading Genomics and Personalised Medicine in the UK**
creating a future where genomics is at the heart of patient care
- **Healthy Ageing: Solutions for a Global Market**
population ageing poses a huge challenge, but there are enormous opportunities too
- **Power of Biology**
the UK is engineering biology for global good
- **The UK's Digital Health Playbook**
the global healthcare challenge and how digital health plays a critical role
- **Health Systems Strengthening**
helping achieve one of the very best global healthcare systems

Case study

UK ships 4 million Covid-19 tests to Ukraine

In 2021-22, UK Export Finance (UKEF) provided a £20 million loan to the Ukrainian government to support the shipment of 4 million Covid-19 PCR tests to Ukraine from the Northern Irish diagnostics supplier, Prestige Diagnostics. The loan was issued under UKEF's Direct Lending Facility, which helps overseas buyers to finance major purchases from the UK. The deal has helped Ukraine to combat the rise of the Omicron variant of the virus and exemplifies how UKEF support can protect trade, safeguard UK jobs, and enable prosperity across all regions of the UK.

inward investment that supports the Government's wider aims:

- Bespoke service for inward investors looking to commit £250 million plus to the UK. DIT's improved concierge service for the highest impact inward investors is managed jointly through No10, DIT and OFI, alongside DIT's expert sector teams.
- A lighter touch, digitally led approach to more standard FDI projects, including an enhanced offering in the online Investment Atlas and triage, through the Investment Services Team, as well as more direct referrals to subnational partners for less complex investments.
- DIT's account and relationship management network in the UK and overseas, enables it to work with multinational companies, high growth SMEs and investors. This includes the cross-Whitehall Strategic Relationship Management (SRM) programme for large global corporate investors, which operates both UK-based and in-market account management of the top current inward investors and has an improved aftercare service for new inward investors.

7.3 Support scaling up and levelling up

The continuing transformation of DIT's investment offer is intended to measure, and target better,

DIT should continue to offer end-to-end support for inward investors along their journey, from first considering the UK to landing their investment projects. This complements DIT's role in attracting capital investment into the sector, both in terms of equity investments into UK SMEs, as well as global capital for life sciences real estate and other infrastructure projects. This will also be vital in ensuring that companies operating in the UK can scale successfully with the resources needed to be globally competitive.

DIT should focus on:

1. Addressing bottlenecks in the growth of the domestic life sciences industry and helping companies to scale.

There is great potential for UK based companies. In 2021, the UK life science sector secured a total of £7bn in equity financing, a greater than twelve-fold increase since 2012²⁶. But too often these promising companies leave our shores in search of scale-up potential. We need to do more to build greater domestic capacity and capability in venture funds and institutional investors to help support UK start-

ups to scale to a more impactful size. DIT and the OFI in partnership with the OLS and others should continue to work to make this happen in a sustainable way which fits with how UK capital markets operate.

UK SME growth can be frustrated by:

- Lack of capital available domestically to help start and scale companies
- Lack of experienced talent, particularly entrepreneurial talent, to scale companies
- Lack of infrastructure for success, particularly modern world-class purpose-built R&D and manufacturing facilities

²⁶ <https://www.gov.uk/government/publications/life-science-sector-data-2022/life-science-competitiveness-indicators-2022#research-environment-1>

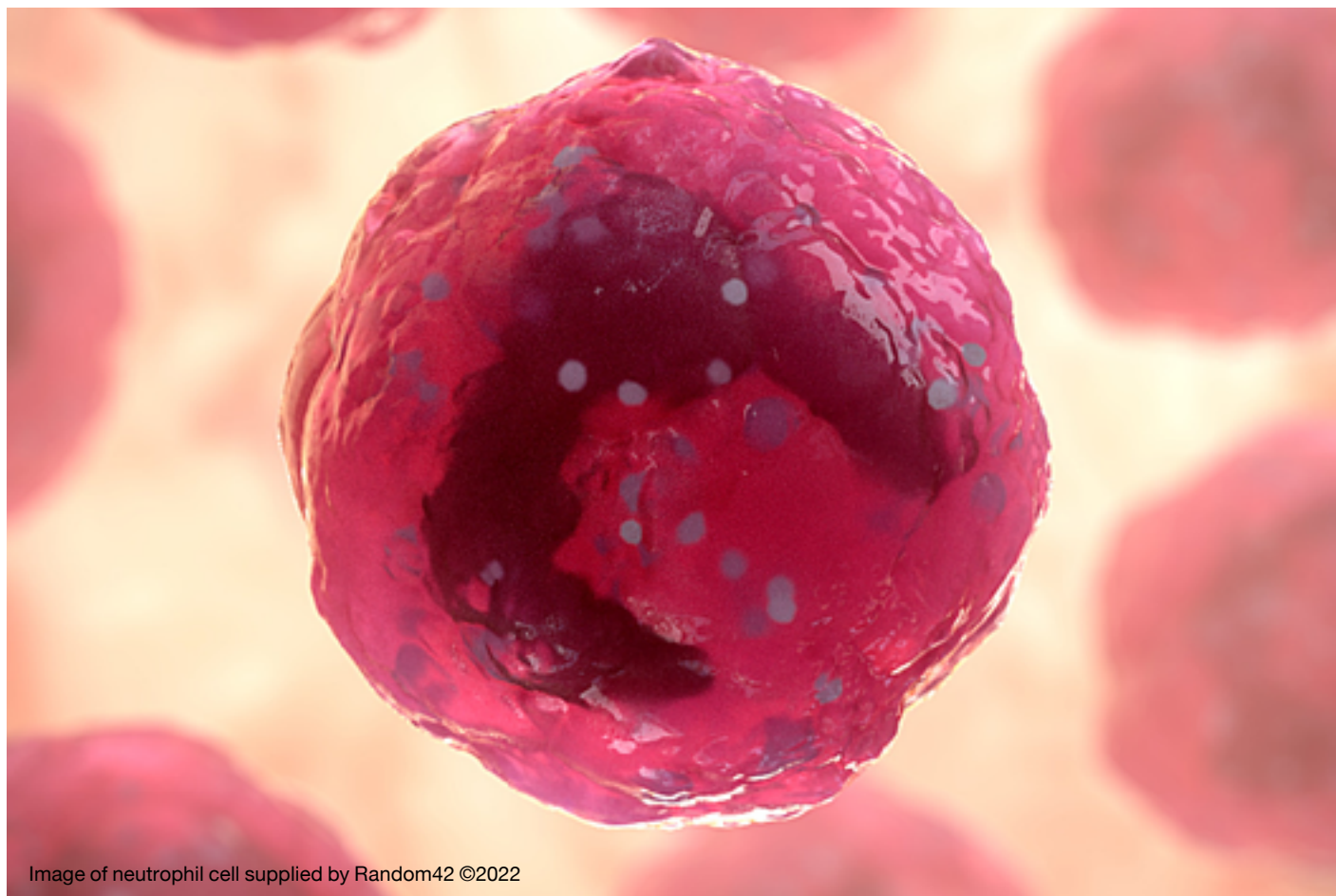


Image of neutrophil cell supplied by Random42 ©2022

What is DIT doing to address these gaps and help businesses to scale and grow their business?

Gap	Initiatives and/or support
<p>Access to finance</p>	<p>Increasing the pool of capital available to UK businesses:</p> <ul style="list-style-type: none"> • OFI has established bespoke partnerships with certain Gulf states with a view to driving forward investment with a mutuality of interests across a range of sectors vital for future growth and prosperity, including life sciences. • DIT's Venture Capital Unit deliberately pursues market-entry of world-leading life science VC funds which can bring differential levels of capital, skills, and technology to the UK. • DIT's life sciences sector team enables business-to-business connections between multinational corporations and UK SMEs. • UK Export Finance is the UK's export credit agency and a government agency, supporting exports for any size of company and across all sectors, from capital goods to services and intangibles such as intellectual property.
<p>Access to talent</p>	<p>Bringing global talent and skills into the UK:</p> <ul style="list-style-type: none"> • DIT's Global Entrepreneur Programme attracts high-skilled global founders and their innovative, IP-rich life science-based businesses and helps them scale and internationalise from a UK HQ. • Global Talent Network will attract the best talent from around the world in Science and Technology to UK, including people with experience of growing life sciences companies. • DIT's role in supporting inward investment can also bring emerging and experienced talent into the UK ecosystem.
<p>Access to infrastructure</p>	<p>Supporting life-sciences focused infrastructure and real estate in the UK where companies can start, grow, and succeed:</p> <ul style="list-style-type: none"> • DIT's capital investment and life sciences teams work together to bring investment into specialist life sciences real estate. There is a significant deficiency in dry and wet labs, making it harder for UK firms to grow and international companies to expand here. To build affordable lab space at scale, in and out of the golden triangle, we need more investors and developers to enter the UK market. • DIT High Potential Opportunities - To grow life sciences clusters of critical mass and global appeal, we help UK regions define their specialist strengths to the market and pursue international companies to move to their area. • DIT's life sciences sector team promotes opportunities to co-fund UK research and development, innovation and data infrastructure linked with government priorities and to strengthen the UK ecosystem.

2. Creating employment and spreading jobs and growth across the UK

With investment comes jobs. From 2011 to 2020, net life sciences industry employment increased by 31,500 and turnover increased by £1.1bn²⁷ in real terms.

More than 50% of sector employment is located outside of London, the Southeast, and the East of England. For MedTech in particular, the picture is even more regionally diverse, with 59% of the workforce outside the Southeast, East of England and London, including 22% in the North of England, 17% in the Midlands, 7% in the Southwest and 13% in Scotland, Wales and Northern Ireland.²⁸



Case study

From across all corners, inward investment successes include:

- Fujifilm Diosynth Biotechnologies (Japan) recently committed £400 million to create the largest multi-modal biopharmaceutical manufacturing site in the UK, creating up to 350 highly skilled jobs on Teesside.
- Q² Solutions, a leading global clinical trial laboratory services organization and a wholly owned subsidiary of IQVIA, expanded its laboratory and operational capabilities at its Alba Campus in Livingston, Scotland, supported by a multi-million pound grant awarded by Scottish Enterprise. This expansion of central labs, genomics, flow cytometry, and translational science laboratory services will support new growth areas for biopharma and pharma clients around the world and drive better patient outcomes.
- US-headquartered PCI Pharma is expanding their manufacturing facility in Tredgar, Wales. The multi-million pound expansion will help the company keep pace with global demand for the production of cancer therapies, and will add about 200 jobs once the facility is at full capacity. PCI has been operating in Tredgar for nearly 40 years and is one of the most significant employers in the local area.

A successful life sciences sector will depend on access to a highly skilled workforce. The government is working in partnership with industry to ensure that the tools are available to recruit, reskill and develop employees in both specialist and non-specialist roles. Highlighting access to talent and skills is one of the cornerstones of the HPO scheme that DIT promotes, showcasing opportunities across the UK to attract international investment.

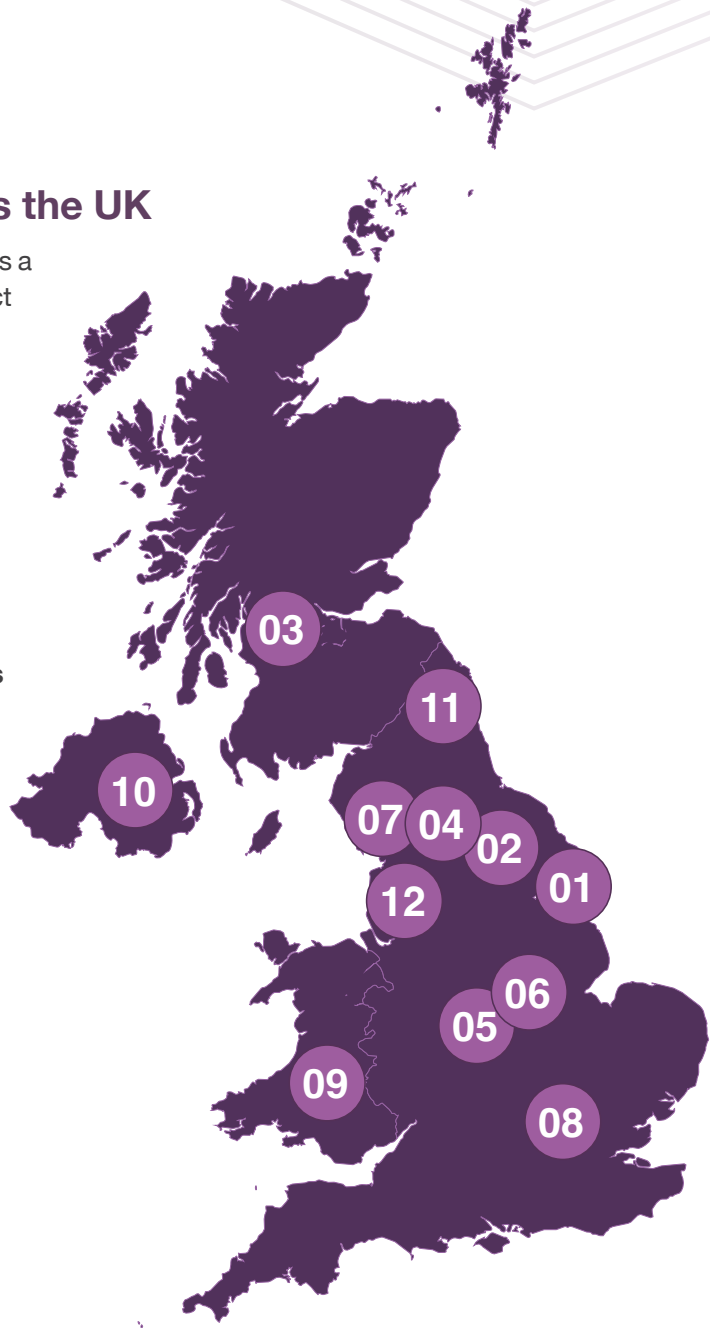
²⁷ <https://www.gov.uk/government/statistics/bioscience-and-health-technology-sector-statistics-2020/bioscience-and-health-technology-sector-statistics-2020#industry-and-sector-trends-2011-2020>

²⁸ <https://www.gov.uk/government/statistics/bioscience-and-health-technology-sector-statistics-2020/bioscience-and-health-technology-sector-statistics-2020#geographical-analysis>

Life Sciences High Potential Opportunities (HPOs) across the UK

To further encourage investment, DIT promotes a series of HPOs located across the UK to attract international investment:

- 01 Chemicals**
The Humber
- 02 Biomanufacturing**
Tees Valley
- 03 Precision Medicine**
Glasgow
- 04 Tissue Repair & Regeneration**
Leeds City Region
- 05 Data Driven Healthcare & Technologies**
Birmingham & Solihull
- 06 Rehabilitation**
Leicester & Leicestershire
- 07 Molecular Diagnostics & Early Detection**
Greater Manchester, Cheshire & Warrington
- 08 Cell & Gene Therapy**
Hertfordshire
- 09 MedTech Health**
Wales
- 10 Precision Biomarkers & Diagnostics**
Northern Ireland
- 11 Healthy Ageing**
North East
- 12 Vaccines**
Liverpool



7.4 Leverage networks to boost demand

Further leveraging DIT's extensive overseas network to undertake export promotion and address market access barriers should be a priority for DIT. Partnering with networks of business representation organisations, such as trade associations and British Chambers of Commerce, to extend and multiply reach is recommended. This should include working together proactively whether to identify and understand the impacts of market access barriers, or spotting opportunities to strengthen other global health systems.

UKEF's network of global International export finance executives also act as a first point of contact for various counterparties in-country to

discuss financing options available from UKEF to support the exports of UK goods and/or services.

DIT's Standards work looks to encourage other countries to join international standard setting bodies to reduce regulatory barriers to trade for UK pharmaceutical and medical devices businesses and bolster the resilience of critical supply chains. There is also the potential to leverage UK public health leadership at an international level, with knock-on benefits to both trade and investment. The UK's regulator, the Medicines and Healthcare products Regulatory Agency (MHRA), has a strong global reputation for innovation and leadership in the field of regulation and has been instrumental in shaping European regulation.

DIT should continue to provide exporters with market information, country insights, networks, and business support.

Case study

In Latin America and the Caribbean, DIT has developed a programme to support improvements in Health Technology Assessments (HTA) processes and to enable the region's populations to access more innovative therapies. In 2021, DIT ran four workshops with the UK's National Institute of Health and Care Excellence (NICE), local Ministries of Health, and HTA agencies. These workshops explored how to support more structured and sustainable pathways that enable more innovative health technology solutions to be incorporated into care systems overseas. These types of engagements also help support the local health system to build capacity. By bringing systems and standards into closer alignment with the way the UK health sector operates, it can make it easier for UK companies to do business in these markets.

Taking these facets together and connecting and collaborating across the private, public and healthcare sectors of the UK, the UK's strong position for exporting and inward investment should continue and nurture the conditions for businesses to grow and for UK plc to flourish.

Case study

DULAS

Dulas was founded in 1982 at the world-renowned Centre for Alternative Technology in Powys, mid-Wales, focussing on pioneering innovative uses of solar, hydro and wind. The employee-owned company developed the world's first mass-produced solar-powered vaccine refrigerator. Dulas supports the hardest to reach communities and has been working in-country to support vital immunisation and relief efforts across the world for decades. They have played a vital role in tackling the COVID pandemic and have delivered hundreds of vaccine refrigerators and freezers in initiatives supported by worldwide NGOs including UNICEF, Gavi and the World Health Organisation. DIT's then Export Minister, Mike Freer, attended the official opening of Dulas' new vaccine refrigerator factory in Bognor Regis in February 2022, saying: "Dulas has played an important part in the UK's role to build global resilience against threats to human health through their invaluable work in supporting vaccine distribution to remote communities using solar powered refrigeration.

"Dulas is a prime example of a business that, thanks to DIT support, can trade around the world and showcase the best of UK exporting and expertise on a truly global scale whilst helping the country, and indeed the world, build back better from the pandemic."

8. Conclusion

The UK life sciences industry, including its services and supply chain, is a vibrant, ambitious and lifesaving and enhancing sector. The views represented above focus on the measures that the UK may take in the trade and investment environment to improve its exporting position and inward investment portfolio. Undoubtedly, the pandemic years of 2020 and 2021 have disrupted the sector and what remains to be seen is how this will manifest itself over the coming years.

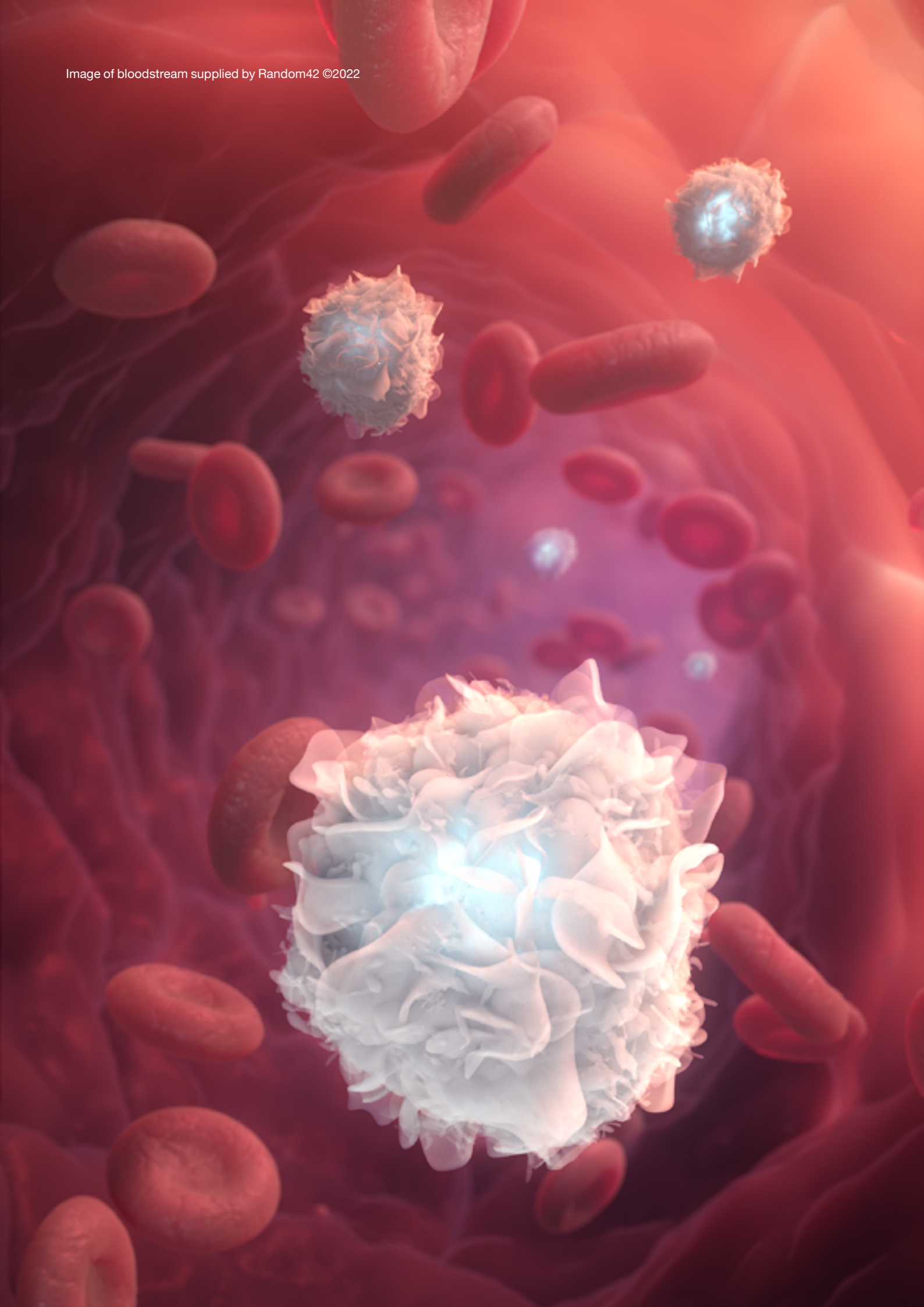
There is much to be optimistic about. Biology itself is being better harnessed, through synthetic and engineering biology, for a range of applications from computing to more productive industries to enabling potential treatments and cures for a range of genetic and rare diseases. In addition, we are already witnessing technology-led change with the uptake of telemedicine in preventing ill health by predicting risk and encouraging better living, as well as management of chronic conditions and wellbeing. In life sciences research, we see the use of artificial intelligence in drug discovery and digital tools in clinical trials. The adoption of digital technology is expansive, creating transformational opportunities and experiences for consumers, health systems and providers.

DIT should continue to utilise and potentially enhance its international commercial healthcare diplomacy; this will facilitate more dynamic, forward-looking and patient-centric synergies between global health systems, investors, exporters, and the wider international life sciences ecosystem.

The UK life sciences sector is a powerful value generator, supporting high value jobs across our four nations. Through working hand in hand with the NHS and healthcare organisations, academia and research, and government, the Board of Trade believes that the UK can regain its exporting form and continue to attract exciting and innovative investors.

Free and fair trade can be a force for good and the Board keenly supports the adoption of the approaches outlined above to help improve healthcare opportunities and outcomes for generations to come, here in the UK and across the world.





9. Analytical annex

Background information

1. Data presented here include goods data only.
2. For UK data, HMRC Overseas Trade Statistics have been used. For data involving other countries, UNCTAD trade data has been used and converted from USD to GBP using the Bank of England average annual spot rate for each year from 2011-2021. Thus, these figures cannot be directly compared to data converted using a different exchange rate.
3. HMRC data are provided on a physical movement basis: Goods entering and leaving an economic territory are recorded as imports and exports, respectively and therefore, cannot be compared to data on a change of ownership basis.
4. All export and import values reported in this section are in nominal terms (i.e. not accounting for inflation).
5. The life sciences sector is defined by Office for life sciences as coming under the SITC codes for the pharmaceutical subsector (SITC 541 & 542) and the medical technology subsector (SITC 774 & 872). However, this is not an exhaustive view of the life sciences sector, and the size of the sector will differ with other definitions.

Compound Annual Growth Rate

1. A CAGR provides the value of the average growth in each period between a defined start and end point. The formula of CAGR is:

$$\text{CAGR} = \left(\frac{\text{EV}}{\text{BV}} \right)^{\frac{1}{n}} - 1$$

where: EV = Ending value;
BV = Beginning value;
and n = Number of years.

2. The most important limitation of the CAGR is that because it calculates a smoothed rate of growth over a period, it ignores volatility and implies that the growth during that time was steady.
3. A five-year time span is generally thought to be the minimum time required to identify any true trends in time series data and is less influenced by any volatile changes, and this is why a five-year CAGR is used in this analysis. However, a CAGR encompassing different years would be likely to show a different growth rate.
4. Global macroeconomic events such as EU Exit and COVID-19 may mean that trends including the years 2020 and 2021 may not be truly representative of underlying trading relationships. Care must be taken when drawing conclusions from these trends.
5. When assessing trade data, no matter how steady the growth in a trading relationship has been in the past, one cannot assume that the rate will remain the same in the future. Similarly, with recent events such as EU Exit and COVID-19, there may be longer term impacts on trade patterns.

Disclaimer

The Board of Trade's reports are intended to bring new thinking to UK trade policy. They include reflections and recommendations from the Board of Trade's Advisers which may differ from existing government policy. The government is under no obligation to pursue these.