

Northern
Ireland

Precision Medicine

Northern Ireland





Precision Medicine Northern Ireland

Belfast

Precision medicine is growing rapidly within Northern Ireland's thriving Life and Health sciences sector. There are opportunities to advance your precision medicine initiatives here, where you can partner or co-locate with leading global companies and world-class research centres.

In our well-established ecosystem, businesses can collaborate with expert companies, academia, and dedicated precision medicine institutes. This unique agile environment lets you develop, test, validate, and commercialise precision medicine products at pace for a global marketplace.

Unique Market Access in Northern Ireland

After the UK's exit from the European Union (EU), Northern Ireland is now the only place in the world with tariff-free market access to both Great Britain (GB) and EU markets.

This offers a unique advantage for businesses based in Northern Ireland. You can benefit from seamless shipment to GB and EU markets, free from tariffs, customs documentation and declarations. You also have access to UK trade agreements.

Your business can complete your journey from bench to bedside in an environment that excels in identifying and validating biomarkers and diagnostic assays and clinical evaluation.



Did you know?



Expertise:

- The Life sciences industry in Northern Ireland employs over 19,500 people.
- The wider health and social care system employs more than 72,000 people.
- Northern Ireland has over 250 companies dedicated to Life and health sciences.
- The Almac Group, a \$1bn company with 7,000 staff across three continents, contributes to over 50% of all FDA-approved new molecular entities, and supports 30% of EU approved/pre-registered gene therapy products.



Research Excellence:

- Queen's University Belfast and Ulster University conduct a wide range of multidisciplinary research in precision medicine, including AI, Clinical diagnostics, Diagnostic biomarker technologies, Genomics, and Data science.
- Queen's University Belfast ranks 4th in the UK for Health and Biomedical Sciences, with 99% of its research being world-leading.
- The 100th spinout from Queen's University Belfast was AilseVax, which develops novel therapeutic vaccines for cancer patients.
- Ulster University ranks 2nd in the UK for Biomedical Sciences
- Ulster University offers the UK's only Personalised Medicine undergraduate programme, including courses in Clinical Trial Design and Patient Recruitment.
- 75% of university spinouts in Northern Ireland focus on Life and health sciences.



Collaboration:

- The Health Innovation Research Alliance Northern Ireland (HIRANI) connects universities, health organisations, and industry bodies. HIRANI facilitates cross-collaboration and connectivity with HSC NI, academia, government, and industry.
- Over the next decade, government investment of £1.3bn will help create global centres of excellence across Life and health sciences allowing companies to collaborate on projects advancing Digital health, Clinical trials, Personalised medicine, Diagnostics, AI, and Big data.



The Almac Group, Belfast



Precision Medicine Capabilities and Expertise

Precision Diagnostics

Northern Ireland has emerged as a leader in Precision diagnostics by blending advanced research with medical technology. This lets our experts manage patients' healthcare models precisely and diagnose specific diseases based on customised data analytics.

Indigenous company Randox is one of the largest diagnostic manufacturers in the world. More than 5% of the world's population (over 400 million people) receive medical diagnosis using Randox's products each year.

Biomarker Discovery and Validation

Northern Ireland has a robust history and expertise in Biomarker discovery and validation. Our academic institutions and specialised research centres lead the way in identifying and validating biomarkers for diseases such as cancer and cardiovascular conditions.

Almac Diagnostic Services helps biopharma companies validate reliable Pharmacodynamic Biomarker assays, providing invaluable guidance within their drug development programmes. Almac has experience in biomarker discovery in a pre-clinical setting using various model systems.

Data Analytics

Researchers and companies in our region harness big data to drive insights for medical research, patient care, and healthcare operations, improving health outcomes, services, and efficiencies.

Diaceutics collaborates with two top-10 global pharmaceutical companies to help them commercialise their therapeutic treatments more accurately and efficiently, increasing uptake by eligible patients and enhancing investment in R&D activity.

AI

Our research and industry partners apply AI to a range of structured and unstructured healthcare data to analyse relationships between clinical data and patient outcomes. They use AI programmes to enhance diagnostics, treatment protocol development, drug development, personalised medicine, and patient monitoring and care.

Sonrai Analytics, an AI precision medicine company, works with Candel to develop multi-modal biological immunotherapies. Using Sonrai's AI Technology platform, 'Sonrai Discovery', they make it possible to interrogate and share multi-omics data, helping researchers at Candel advance the development of cancer therapeutics.

Education and Research

Northern Ireland is home to two world-class universities, Queen's University Belfast and Ulster University, both of which offer renowned degrees in Life and health sciences and contribute to a strong talent pipeline.

In 2020/2021, there were:



6,100 graduates in Life and health sciences



20,000 university enrolments in related degrees



over **2,300** postgraduate graduates in areas such as Biomedical engineering and biomedical sciences

Northern Ireland has gained a global reputation for our strong and collaborative research and innovation environment driven by our universities. Investors and businesses can access 18 Life and health sciences Centres of Excellence with over 1,000+ researchers.



Ulster University, Belfast



Queen's University Belfast



Ulster University, Belfast

Industry-Focused Research in the University and Healthcare System

Precision Medicine Centre (PMC)

The PMC at Queen's University Belfast is a hybrid diagnostic/research laboratory that integrates genomics, digital pathology, and artificial intelligence to streamline biomarker development from discovery to adoption. The Centre successfully blends quality standards from industry (ISO 15189:2012), clinical relevance from healthcare, and operational versatility from academia. It also works closely with the HSCNI (NHS Northern Ireland) to provide advanced genomic testing to patients with solid cancers.

The Northern Ireland Biobank (NIB)

The NIB supports the research activities of the Molecular Pathology Programme at Queen's University Belfast and the Precision Medicine Centre. The Biobank has two core 'collection' strategies: the first is prospective generic collection of human samples. The second collection is the 'retrospective' collection, using regulated access to samples held in Health and Social Care Trust laboratories for hypothesis-led, ethically approved projects.

Clinical Translational Research and Innovation Centre (C-TRIC)

C-TRIC is a collaboration of the local NHS (WHSC), Ulster University and the local Council, that facilitates translational and clinical research. It is a state-of-the-art clinical research facility (CRF) that delivers high-throughput single-cell multiomics and next generation sequencing (NGS) services and training. It is based at the Althnagelvin Hospital site, and alongside the Personalised Medicine Centre at Ulster University, allows C-TRIC to foster direct connections between patients and transformative research initiatives, all aimed at elevating patient care standards.

The Medicines Optimisation Innovation Centre (MOIC)

MOIC is the only dedicated centre of its kind in Europe and works alongside the Health and Social Care Trust NI and the private sector to drive innovation in medicines use. With a strong patient focus, MOIC is uniquely placed to deliver better patient outcomes by developing and sharing best practice in medicines through research, innovation, quality improvement and knowledge transfer. MOIC works closely with partners across a range of sectors including healthcare, academia and commercial and welcomes collaboration with industry.

Future Medicines

Future Medicines is a consortium led by Queen's University Belfast which aims to deliver inclusive economic growth in Northern Ireland by accelerating the development of novel platform technologies, and Precision medicine products to increase the competitiveness of the industry partners and the wider ecosystem.

Drug Discovery Centre at Queen's University Belfast

Queen's University has established a Drug Discovery Centre in collaboration with government and The Almac Group. It focuses on a form of drug discovery called chemoproteomics studying the interaction between small molecules and proteins produced in the human body.

Future Investment

The Government is committed to developing and advancing the Life and health sciences sector in Northern Ireland. Investments to be delivered include £1.3 billion through City and Growth deals, with £200 million earmarked for future opportunities for healthcare.

The opportunities in health will see projects to advance Health technology, Clinical trials, Data analytics, and Medical devices, creating a step change in the growth of the sector.

These investments will provide opportunities for global and local businesses to tap into the the world-leading expertise of our universities and develop breakthrough technologies, products, and services. These investments will strengthen the infrastructure that allows these products to be tested, trialled, and de-risked.

Centre for Digital Healthcare Technology (CDHT)

The Centre for Digital Healthcare Technology will be an exemplary centre for digital technology and associated living labs in cardiology, diabetes, respiratory and stroke. It will act as a forum for academia, industry, and clinicians to lead on research focused on key global health challenges, including healthcare costs and healthy ageing. belfastregioncitydeal.co.uk/projects/centre-for-digital-healthcare-technology-cdht

iREACH Health

This collaboration between researchers, industry, clinicians, and the NHS creates a unique ecosystem for clinical trials and testing new drugs through their development lifecycle and integration into care pathways. belfastregioncitydeal.co.uk/projects/institute-for-research-excellence-in-advanced-clinical-healthcare-ireach

Momentum One Zero

A nexus for co-innovation between researchers and industry in data security, connectivity, and analytics. It focuses on how interventions in areas such as the environment can impact human health. This brings together human, animal, and environmental health data to support a "one health" perspective. belfastregioncitydeal.co.uk/projects/gii-global-innovation-institute

Personalised Medicine Centre at Ulster University

This centre will provide world-leading capability in data analytics, biomarker discovery, and MedTech development. It also has capacity to perform robust clinical trials and business support to commercialise and implement new diagnostic tests, drugs, and technologies. derrycitydeal.com/projects/thrive

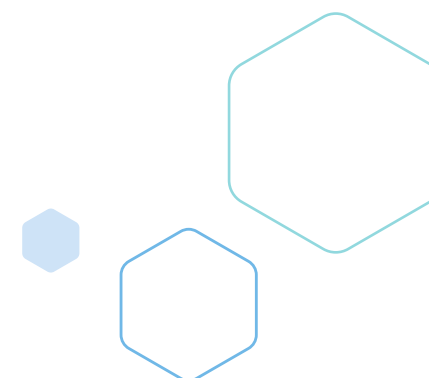
The Centre for Food and Drug Discovery at Queen's University Belfast

A single-site, preclinical hub for the biopharmaceutical and food industry. It offers capability, capacity, and expertise at all key stages of the drug discovery pipeline.



C-TRIC, Derry - Londonderry

They represent an excellent investment opportunity for international businesses and offer international research institutions huge opportunities for research and collaboration.



Industry Innovators in Northern Ireland

The Almac Group

Almac Group is an established global leader employing over 7000 staff across 18 facilities in Europe, North America and Asia. Almac provide a range of expert services and support across the drug development lifecycle. Almac have expertise in R&D, diagnostic services, API manufacture, formulation development, clinical trial supply services and technologies through to commercial – scale manufacture and distribution. Almac is trusted by the leading global biopharma companies to provide services across drug development projects.

Almac Diagnostic Services support global pharma and biotech companies with their biomarker strategies from discovery through to companion diagnostic partnerships. The services offered fall into three main categories; Genomic Services, Clinical Trial Assays and Companion Diagnostics.

Almac API Services and Chemical Development provides integrated services from development to commercial scale of advanced intermediates and Active Pharmaceutical Ingredients (API).

Almac Pharmaceutical Drug Product Development can tailor pharma company needs from developing a fit-for-purpose formulation for First-in-Human trials to scaling up for late phase trials, registration and ultimately for ongoing commercial supply. Almac offer analytical testing labs to support drug substance (API) and drug product (finished product) analytics across all phases of clinical development and into commercial disease.

Almac Clinical Services provide custom designed services and software solutions to support delivery of clinical trial from protocol to patient delivery. Almac Commercial Services have over 50 years experience and commercial facilities in the UK, US and EU to provide quality led commercial solutions from orphan drug launches to ongoing high volume commercial product manufacture, packaging and supply.
almacgroup.com

In the last 5 years, Almac have contributed to over 50% of all FDA approved New Molecular Entities (NMEs) and are currently supporting 50% of EU approved/pre-registered Gene therapy products.

ARC Regulatory

ARC Regulatory is a niche provider of global regulatory, quality, and clinical research solutions to the Precision medicine and in vitro diagnostic medical device industry.

ARC Regulatory supports companies of all sizes, from the world's top Pharmaceutical and Biotech leaders to start-ups, in their search to find kinder treatments and quicker solutions to complex regulatory and research compliance requirements when bringing new medical discoveries to market.

arc-regulatory.co.uk

Axis Bio

Axis Bio is a preclinical contract research organisation with specialist capabilities in oncology, inflammation and respiratory diseases. Services range from in vitro efficacy and mechanistic studies to in vivo target engagement, with each study tailored to the unique requirements of the client. They partner with Sygnature Discovery to offer INIVE (in vitro-in vivo extrapolation) to identify ideal dosing regimens to maximise efficacy for in vivo models.

axisbio.co.uk

CV6 Therapeutics

This drug development Biotechnology company focuses on the discovery, development, and commercialisation of novel therapies for the treatment of human diseases. CV6 has received approval from the MHRA for the company's first in-human Phase 1a clinical trial of its lead oncology therapeutic, CV6-168, in patients with colorectal and other cancers.

cv6t.com

Diaceutics

Diaceutics provides the data, technology solutions, and insights that enable the Life science sector to revolutionise the commercialisation of products and improve patient outcomes. Through their DXRX® platform, they provide data analytics, scientific, and advisory services to the world's leading Pharma and Biotech companies, ensuring personalised therapies for patients. The majority of global Pharma companies use their Diaceutics data every day to find patients.

diaceutics.com



Industry Innovators in Northern Ireland

Exploristics

This award-winning company is a global provider of bio-simulation software and biostatistics services for designing, analysing, and reporting clinical trials and real-world studies. Exploristics offers a unique approach to biostatistics support for life science organisations developing medicines, diagnostics, and medical devices. Their exceptional study design platform, KerusCloud, is an innovative cloud-based simulation software that lets researchers optimise clinical study design and analysis approaches in a virtual environment. This de-risks study protocols and improves success rates while cutting costs and development timelines.

exploristics.com

Fusion Antibodies

This Belfast-based contract research organisation provides a range of antibody engineering services for the development of antibodies for both therapeutic drug and diagnostic applications. The company offers services including antibody engineering and humanisation, antibody sequencing, and protein purification.

fusionantibodies.com

G&L Healthcare Advisors

G&L design, implement, and run innovative solutions to overcome challenges faced by global healthcare companies. With expertise in every aspect of regulatory affairs, quality assurance, and clinical development, they provide essential support to healthcare organisations.

gandlhealth.com

GenoME Diagnostics

GenoME develops cost-effective assays for earlier and more accurate detection of diseases with an unmet clinical need. Their assays are designed for highly sensitive detection of low levels of circulating tumour DNA, which is key for developing a blood test that can diagnose ovarian cancers earlier, accurately, and detect relapses.

genomediagnostics.co.uk

ProAxis Limited

This diagnostics company has a rapidly growing client list of Pharmaceutical companies and academic laboratories. ProAxis promotes a range of assay kits designed for the specific measurement of active protease biomarkers of disease. It also offers sample analysis at its purpose-built laboratory facility in Belfast and currently supports a number of pharmaceutical company-sponsored Phase I, II, and III clinical trials.

proaxis.com

Randox

Randox is one of the largest diagnostic manufacturers in the world with offices and distribution in over 145 countries. Randox develops innovative diagnostic solutions that offer clinicians and physicians insight into patient diagnosis for effective disease management and treatment. This spans a range of health conditions, including heart disease, diabetes, Alzheimer's disease, cancer, and stroke.

randox.com

Re-Vana

Re-Vana Therapeutics are a spin out company from Queen's University Belfast. Re-Vana is a pioneering therapeutics and ocular drug delivery company focused on the development of innovative sustained-release biologics to treat serious diseases of the eye using its proprietary photo-crosslinking technology. Re-Vana envisions a new industry standard of 6-12 months in the delivery of biologics to the retina to create transformative and differentiated treatments for patients and their physicians. The company is creating a portfolio of photo-crosslinked biodegradable technologies, including EyeLief®, EyeLief-SD™, and OcuLief®, that deliver biologics (e.g. anti-VEGF) to the eye for an extended period of 6 months.

revanatx.com

Sonrai Analytics

This rapidly growing AI data analytics company based in Belfast, Northern Ireland, helps biotech, pharma, and Contract Research Organisations (CROs) maximise the potential of their data and bring new life-saving drugs to the market faster. Sonrai offers an AI data analytics platform, InDRA, alongside bespoke services including data science support, algorithm development, and software engineering.

The company leads an Artificial Intelligence in Health and Care Award to deliver novel AI cancer screenings across the NHS. Partnering with the Precision Medicine Centre (PMC) at Queen's University Belfast, the programme is a transformational tool in cancer diagnostics, providing more timely, accurate and affordable laboratory results.

sonraianalytics.com





Find out more

For more details on Northern Ireland's pioneering Precision medicine capabilities, please visit investni.com/lifeandhealthsciences

And discover more about our Life and health sciences companies here: investni.com/life-and-health-sciences-company-directory

