BIOTECH WHY HK ?

18 Sept 2018

HKSTP

Outline

1. **CFDA accredited clinical trial centers in HK**
2. HK has high quality and internationally recognized biomedical and clinical research team
3. HK biotech has strong support from both government and private sector
4. A biotech ecosystem in HK Science Park
5. Opportunities in Greater Bay Area

CFDA accredited specialties in Queen Mary Hospital for Mainland China clinical trials :

1	Anesthesiology	8	HKU Phase 1 Clinical Trials Centre
2	Cardiology	9	Nephrology
3	Clinical Immunology	10	Neurology
4	Endocrinology & Metabolism	11	Obstetrics & Gynecology
5	Gastroenterology & Hepatology	12	Oncology
6	Hematology & Bone Marrow Transplantation	13	Orthopedics & Traumatology
7	Hepatobiliary & Pancreatic Surgery and Liver Transplantation	14	Pediatrics & Adolescent Medicine
		15	Respiratory Medicine

2014/9/4 http://samr.cfda.gov.cn/WS01/CL0087/106059.html
2016/7/20 http://samr.cfda.gov.cn/WS01/CL0087/161320.html

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CFDA accredited specialties in Prince of Wales Hospital for Mainland China clinical trials

1	Anesthesia and intensive care	9	Oncology
2	BABE (Bioavailability & Bioequivalence)	10	Otolaryngology - Head and Neck Surgery
3	Cardiology	11	Pediatric hematology
4	Endocrinology	12	Pediatric Respiratory
5	Gastroenterology	13	Pediatric immunology
6	Hematology	14	Pediatric infectious Disease
7	Neurology	15	CUHK Phase 1 Clinical Trial Centre
8	Obstetrics and Gynecology	16	Urology

2014/9/4 http://samr.cfda.gov.cn/WS01/CL0087/106059.html
2016/7/20 http://samr.cfda.gov.cn/WS01/CL0087/161320.html

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CFDA accredited specialties in Eye Hospital for Mainland China clinical trials

1	Ophthalmology		

2014/9/4 http://samr.cfda.gov.cn/WS01/CL0087/106059.html
2016/7/20 http://samr.cfda.gov.cn/WS01/CL0087/161320.html

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Hong Kong has high quality biomedical and clinical research.

Moving up

	Ranking 2018	2017
University of Hong Kong	**26**	27
University of Science and Technology	**30**	36
Chinese University	**46**	44
City University	**49**	55
Polytechnic University	**95**	111
Baptist University	**299**	278
Lingnan University	**551-600**	601-650

Source: QS Quacquarelli Symonds SCMP

Five Universities in 2018 QS Top 100

香 港 大 學
THE UNIVERSITY OF HONG KONG

香港科技大學
THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

香 港 中 文 大 學
The Chinese University of Hong Kong

CityU
香港城市大學
City University of Hong Kong
專業 創新 胸懷全球
Professional · Creative For The World

THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

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Human Genetics

Warren Alpert Foundation Prize Recipients

2018

For pioneering contributions to the discovery of the cystic fibrosis transmembrane conductance regulator (CFTR) gene and to the subsequent research that led to the development of transformational precision medicines to treat the underlying cause of cystic fibrosis.

Francis Collins

Lap-chee Tsui

Bonnie Ramsey

Michael Welsh

Paul Negulescu

In 1989 Prof. Tsui identified the defective gene that causes cystic fibrosis, which is a major breakthrough in human genetics. He was Geneticist-in-Chief and Head of the Genetics and Genomic Biology Program of the Research Institute, at The Hospital for Sick Children in Toronto before he became the 14th Vice-Chancellor of the University of Hong Kong (HKU). He is now the President of The Academy of Sciences of Hong Kong.

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Lung Cancer

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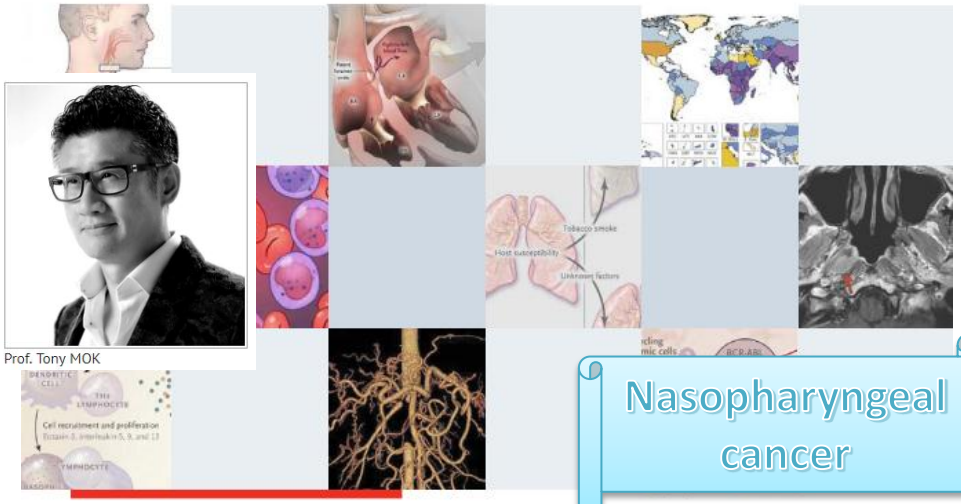
The *New England Journal of Medicine* is a publication of NEJM Group, a division of the Massachusetts Medical Society.

The NEW ENGLAND JOURNAL of MEDICINE



Prof. Tony MOK

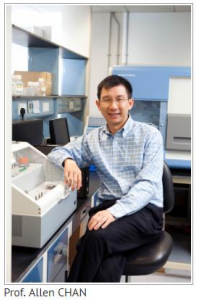
Nasopharyngeal cancer

Notable Articles of 2017

2 out of 10 are from CUHK

Prof. Dennis LO

A collection of articles selected by NEJM editors



Prof. Allen CHAN

NEJM GROUP

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Liquid Biopsy

Scientific Awards

npj Genomic Medicine Editor-in-Chief, Professor Stephen Scherer and Associate Editor, Charles Lee named 2017 highly cited researchers

npj Genomic Medicine Editors, Professor Stephen Scherer and Charles Lee have been named amongst the 2017 Highly Cited Researchers, by Clarivate, formerly the Intellectual Property & Science business of Thomson Reuters. This is the second year in a row that Professor Scherer and Professor Lee have received this award, after receiving the same title in 2016. The list is a citation analysis identifying more than 3,400 researchers across 21 fields of the sciences and social sciences, on the basis of their highly cited papers authored between January 2005 and December 2015. This distinction recognizes Prof. Scherer and Prof. Lee as two of the most impactful scientists in the category of Molecular Biology and Genetics.

npj Genomic Medicine Associate Editor, Professor Dennis Lo, is honored by two awards for his work in life sciences.

Professor Dennis Lo has been awarded the Chinese Future Science Prize for his discovery of fetal DNA in the plasma of pregnant women, which has led to a new approach for non-invasive prenatal testing. This research has revolutionized the way Down Syndrome is now detected in over 90 countries.

Professor Dennis Lo is also honored as one of the 2016 Thomson Reuters Web of Science Citation Laureates for his work detecting cell-free fetal DNA in material plasma, a revolution in noninvasive prenatal testing. This study identifies the most influential researchers who are likely Nobel Prize candidates and has accurately predicted Nobel Prize winners for over a decade.

Prof. Dennis LO

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Breakthrough Discoveries at HKUST Offer New Hope for Treatment of Alzheimer's Disease

Alzheimer's Disease

21-04-2016

A research team led by scientists from the Hong Kong University of Science and Technology (HKUST) has discovered that a protein found in the human body could be potentially developed as an effective treatment for Alzheimer's disease (AD).

The team, led by Prof Nancy Ip, Dean of Science, Director of the State Key Laboratory of Molecular Neuroscience and The Morningside Professor of Life Science at HKUST, in collaboration with Prof Eddy Liew from the University of Glasgow and Prof Baorong Zhang from Zhejiang University, has found that the protein interleukin-33 (IL-33) ameliorates cognitive decline and Alzheimer's disease-like pathology. The groundbreaking study was conducted at HKUST and the results have just been published in the prestigious scientific journal, *Proceedings of the National Academy of Sciences USA* (PNAS).

AD is a progressive and highly debilitating brain disease, which is currently irreversible and incurable. Patients suffer from cognitive deficits such as impaired memory, reasoning, judgement and movement. Pathological hallmarks include the accumulation of beta-amyloid (Aβ) plaques and neurofibrillary tangles in the brain.

IL-33 is a protein made by the human body that modulates immune functions. The team at HKUST focused their attention on IL-33 due to its compromised function in individuals with mild cognitive impairment who are at high risk of developing AD. They found that injection of IL-33 in APP/PS1 mice (transgenic mice with AD-like pathologies) resulted in remarkable and rapid recovery of cognitive functions. Within a week, the neuronal communication defects and memory loss in APP/PS1 mice were reversed. Also significantly, the team found that IL-33 injection for 2 consecutive days was sufficient to reduce the levels of Aβ protein and, in turn, decrease the deposits of amyloid plaque in the brains of these mice.

Prof Nancy Ip (front row, middle), Prof Amy Fu (front row, second right), Prof Tom Cheung (front row, second left) and other research team members

Prof Nancy Ip

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Influenza

The Consul general, Dr Roberto Bruzzone, the Grand Chancellor, and Prof Malik Peiris


香港大學
The University of Hong Kong
肝病研究國家重點實驗室
State Key Laboratory for Liver Research
Liver diseases
Prof Irene Ng
Loke Yew Professor in Pathology and
Director, State Key Laboratory for Liver Research
I'm the director of the State Key laboratory for Liver
Research
00:17

Features

Walking with Diabetic Patients for a Decade: Juliana Chan and Hong Kong Institute of Diabetes and Obesity

Diabetes

CUHK diabetes research team
Front row: Prof. Juliana Chan *(centre)*, Prof. Ronald Ma *(left)*

HKSTP

HKU leads the Asia's first genetically modified hematopoietic stem cell transplantation for late juvenile metachromatic leukodystrophy patient (MLD)

20 May 2015

Gene Therapy

Dr Lian Qizhou (Third from the right), Assistant Professor of the Department of Ophthalmology and Department of Medicine of Li Ka Shing Faculty of Medicine, HKU and his team, Professor Zhuo Jiacai (First left), Clinical Professor and Head of the Division of Haematology at the Second People's Hospital of Shenzhen (The First Affiliated Hospital of Shenzhen University) and patient Miss Liao Yu-an (Second left) and her mother Ariel Lee Pi-ju (Third from the left) took a group photo together.

Media Interview of the MLD patient on 9 Apr 2018

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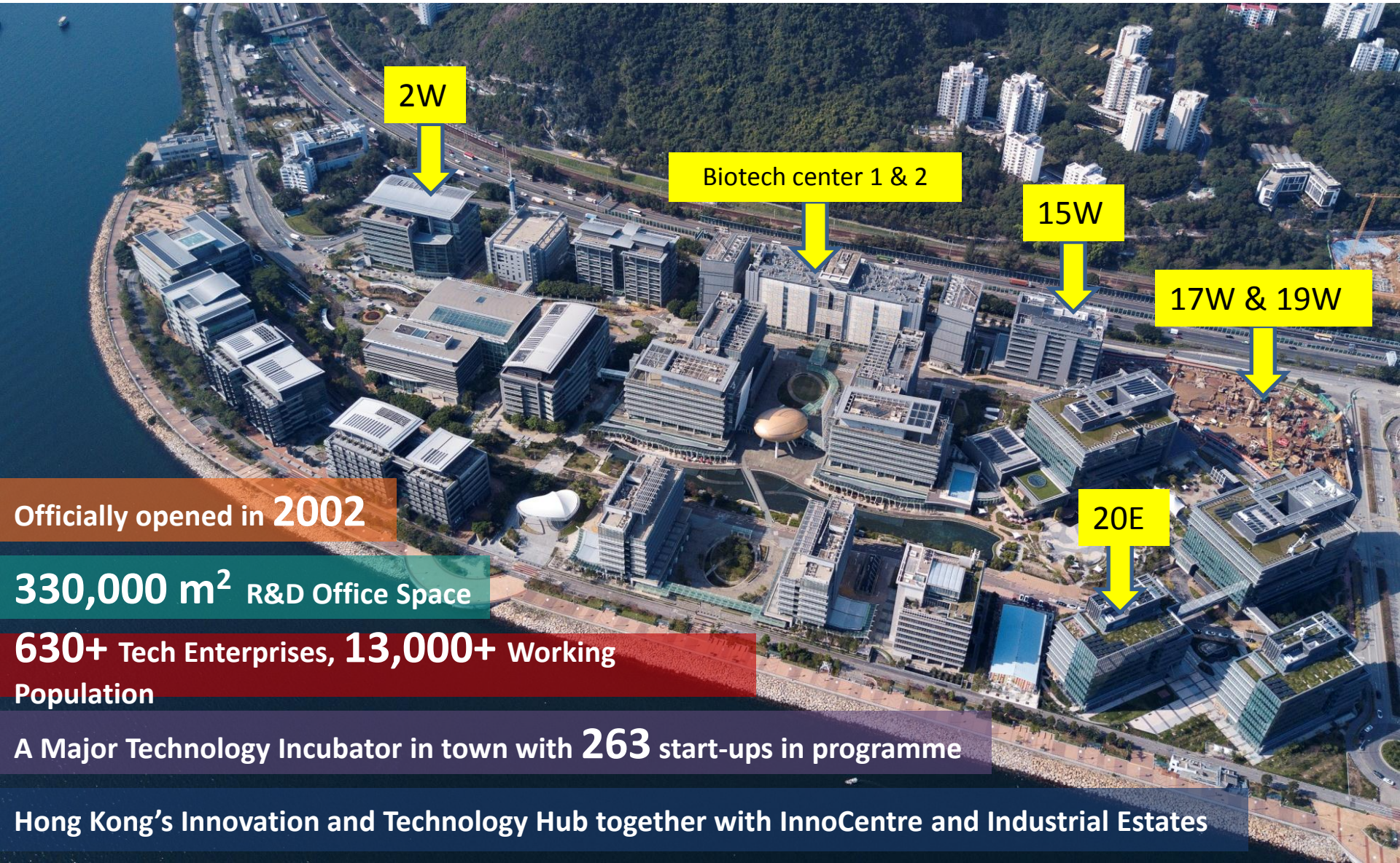
Fertile Ground for HK's Innovation-driven Future



Officially opened in **2002**

330,000 m^2 R&D Office Space

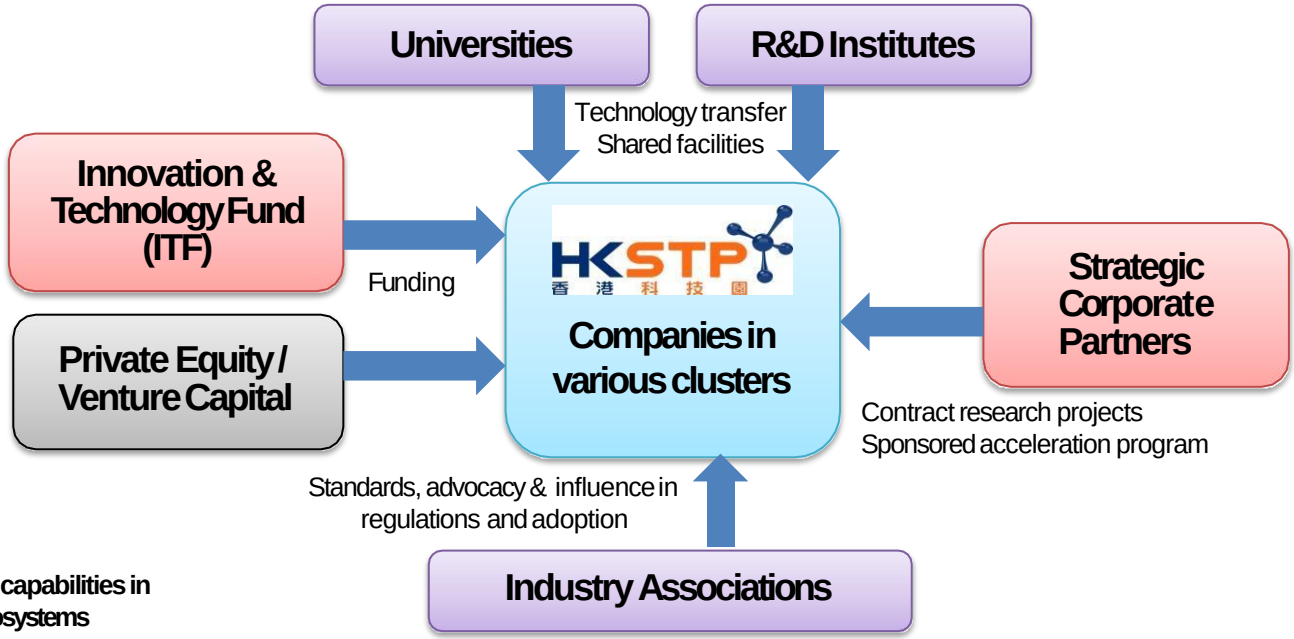
630+ Tech Enterprises, **13,000+** Working Population

A Major Technology Incubator in town with **263** start-ups in programme

Hong Kong's Innovation and Technology Hub together with InnoCentre and Industrial Estates

HKSTP: Connect, Collaborate, Catalyze

Electronics	Material & Precision Engineering	Biomedical Technology	ICT	Green Technology
✦ Semiconductor, integrated circuits ✦ Components & modules ✦ Sensors, display, power ✦ Electronics products	✦ Photonics, laser, optics ✦ New materials ✦ Diagnostics & calibrations ✦ High precision module/ machinery	✦ Therapeutics - regenerative Medicine, Chinese Medicine ✦ Medical Devices ✦ Diagnostics	✦ Big Data and analytics ✦ Cloud Computing ✦ 5G, Internet of Things (IoT) ✦ VR, AR	✦ Renewable energy ✦ Power storage, smart grid ✦ Smart buildings ✦ Smart mobility ✦ Waste management & recycling



Strengthening I&T capabilities in 5 Cluster Ecosystems

Space Options

- Bare-shell laboratory
- Office
- SME laboratory
- SME office
- Healthcare device hub

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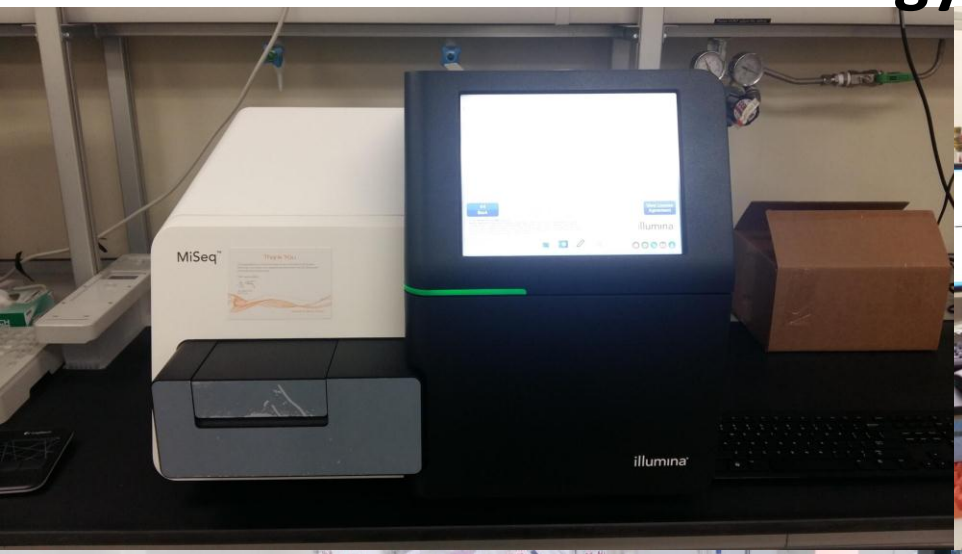
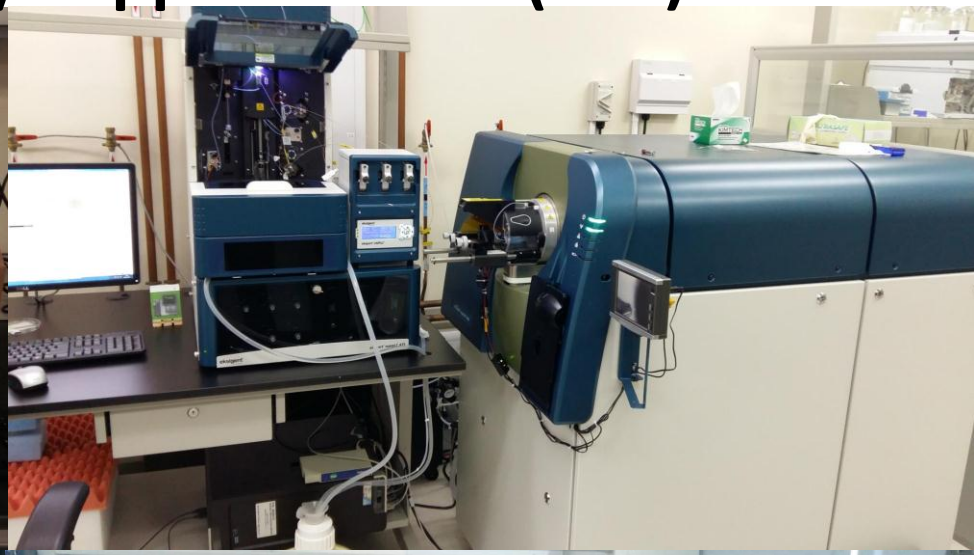
General & Advanced Equipment Support
Biomedical Technology Support Centre (BSC)

Find us on





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Translational research to Commercialization

Idea

Components of translational research chain

Market 

	Animal pharmacology	Pilot Batch Facility	Biobanks	Clinical Trials (Phase I,II,III,IV)
HKSTP	**Animal research facility** Provide GLP drug safety/toxicology assessment	**Pilot batch facility** Provide GMP drug quality assessment for every stage of clinical trials	**Brain and Blood biobanks** Support biomarker discovery and efficacy analyses	**Chinese medical database** Centralized data platform to provide controlled open data

Complete biomedical product commercialization chain in HK
Attract and retain high-profile anchor R&D companies
Strengthen international relationships/collaborations
Develop talent pool and ready for re-industrialization

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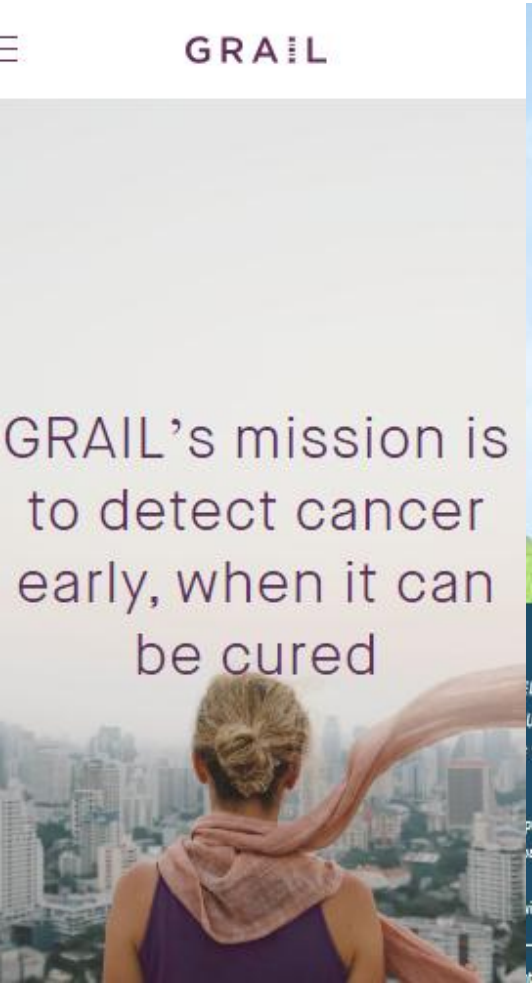
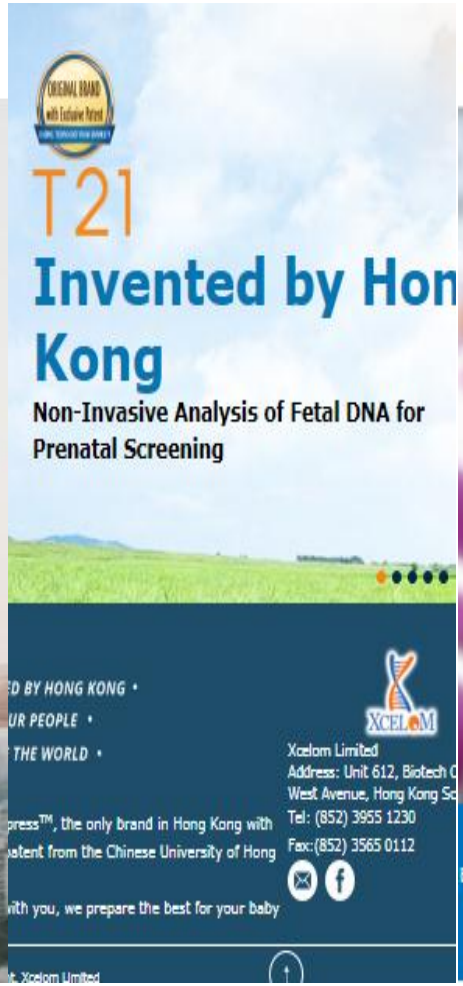
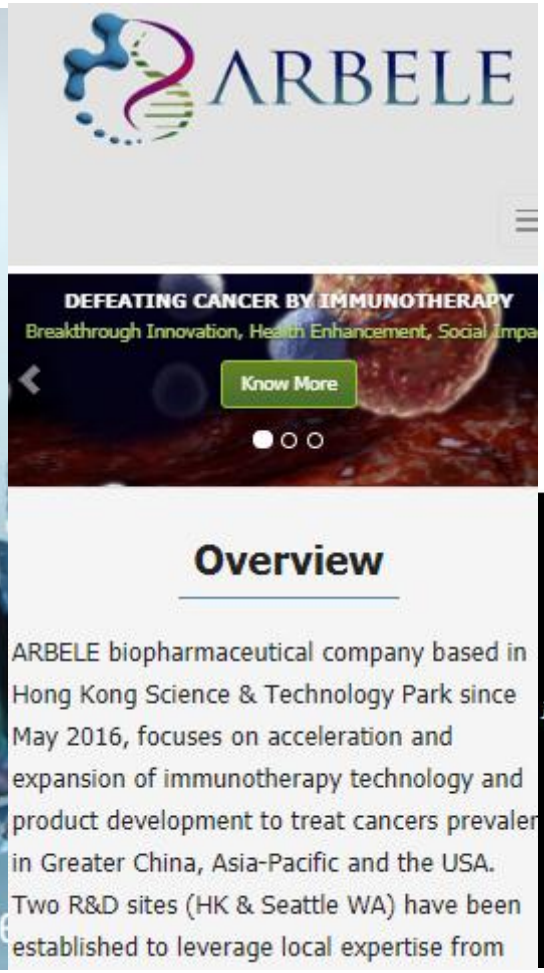
Hong Kong Science Park
An ecosystem > 100 biomedical companies





Hong Kong Science Park
An ecosystem > 100 biomedical companies



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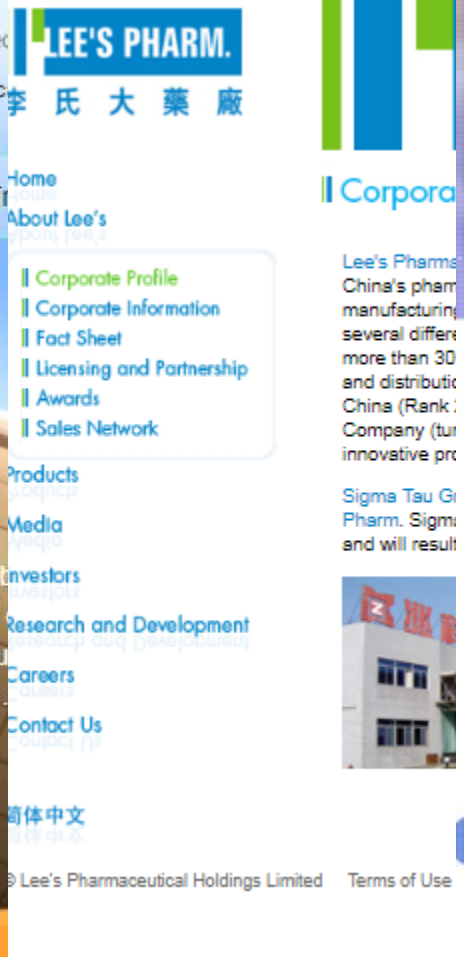

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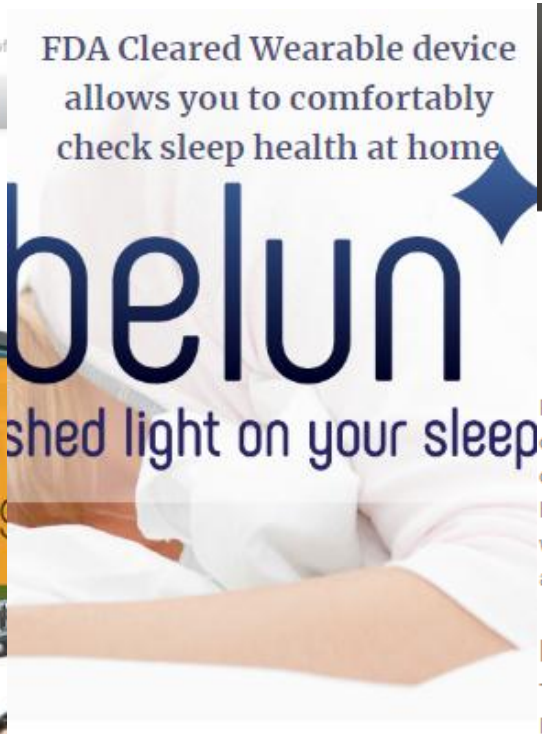

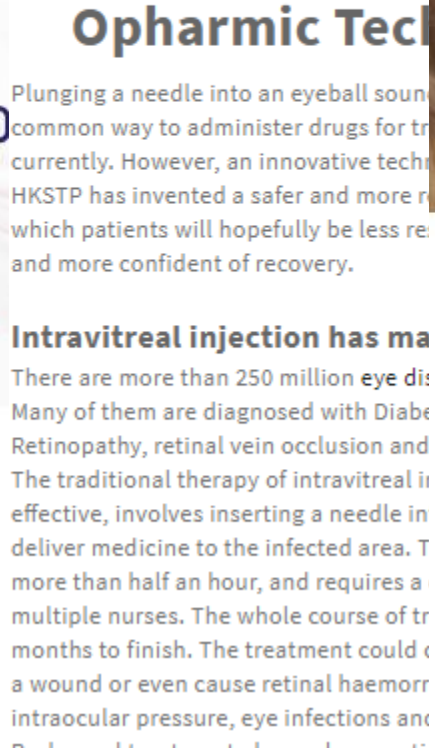

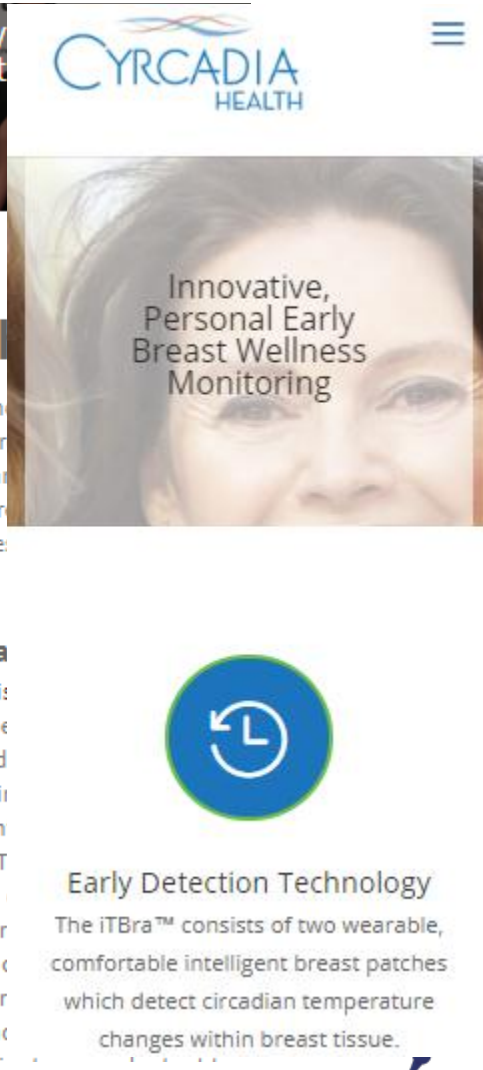

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Hong Kong Science Park
An ecosystem with top research institutes

Karolinska Institutet

Ming Wai Lau Centre for Reparative Medicine
劉鳴煒復修醫學中心

Karolinska Institutet R&D on biomedical engineering, gene-editing and RNA technology

GIBH
Stem cell research center commercializing projects on treating blood, liver, CNS and eyes diseases

Pasteur Foundation Asia 巴斯德亞洲基金

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News & Updates

The Institut Pasteur to Collaborate with HKU and HKSTP on Biomedical Innovation

21.06.2018

The Institute Pasteur, the University of Hong Kong (HKU) and the Hong Kong Science and Technology Parks Corporation (HKSTP) signed a Memorandum of Understanding (MoU) at the Institut Pasteur in Paris today to set up a joint biomedical research centre.

21 June 2018, Hong Kong

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