EDDC Experimental Drug Development Centre

Annual Report 2023

January – December 2023

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About Us

EDDC is Singapore's national platform for drug discovery and development. We champion the translation of great science into great medicines to galvanise the growth of Singapore's biopharma ecosystem.

Bridge the drug development gap in Singapore

- Engage local entities to translate biomedical research projects into drugs for commercialisation
- Bridge the drug development gap with expert know-how and innovative drug platforms

Attract research investments & catalyse the biopharma ecosystem

- Develop a pipeline of high-quality therapeutic assets that attract and sustain private investments into Singapore
- Encourage the spin-off of innovative biotech companies to enhance Singapore's biotech ecosystem

"It has been an honour to walk alongside the team at EDDC in its journey through the oft-times challenging but highly important task of translating great science to great medicines. EDDC's dedication to its mission continued to shine forth in 2023 with milestones like the start of clinical trials for the first made-in-Singapore antibody-drug conjugate, EBC-129. This achievement is a testament to the collaborative spirit of EDDC's local research and clinical partners. I am excited to see the further impact EDDC will make in 2024."

Prof William Chin
Co-Chairman

Bertarelli Professor of Translational Medical Science and Medicine Emeritus, Harvard Medical School
Former SVP Discovery Research, Eli Lilly

"EDDC continues to play a pivotal role in Singapore's innovation ecosystem, as a bridge between academic research and commercial drug development, as well as to support the growth of local biotech companies. It continues to punch above its weight to enhance Singapore's standing on the global stage.

I am proud to be part of these efforts."

Prof Benjamin Seet
Co-Chairman

Group Chief Research Officer
National Healthcare Group

Dear colleagues and friends of EDDC,

As I reflect on 2023, I am grateful to have navigated the year's journey with the resilient and dedicated team at EDDC.

This year witnessed the initiation of clinical trials for EBC-129, the first made-in-Singapore antibody-drug conjugate. The first patient was dosed in May 2023 and interest to participate in the study has been high. This is not just a milestone for EDDC but also for our committed research and clinical collaborators, who continue to work closely with us to progress the trial.

We also fostered new partnerships through global alliances with esteemed partners such as Cancer Research Horizons in the UK, BioCurate in Australia and XtalPi in China. We welcomed a new collaboration with local biotech, ImmunoScape, jointly venturing into the development of new bispecific T-cell receptor-based constructs. We also continued to progress our positive partnership with the Singapore Eye Research Institute. We hope that these collaborations will propel us into a future of collective impact and shared successes.

EDDC Academic Research Organisation (EARO), our fee-for-service arm, also published its three-year review, showcasing the substantial contributions we've made to our local community.

We also took the chance to map out our key focus areas during our annual leadership retreat. Moving forward, we will focus our attention on innovative First-in-Class targets and build know-how in Oncology and Inflammation & Immunology diseases. We have also set our sights on the next frontiers of small molecule drug discovery, with the goal of accelerating projects and internal capability build-out in RNA targeting and developing degraders. We intend to foster collaborations locally and globally in these areas. To ensure that EDDC remains future-ready, we will invest in building up our AI-driven drug discovery capabilities and expand our wet lab automation efforts.

With our new CSO Dr Weidong Hao joining our leadership team, the Discovery organisation was also restructured to meet the goals described above.

As you peruse this year's annual report, I hope the grit and dedication of our extraordinary team become apparent. We may be little, but we aim to stand tall beside industry giants, constantly challenging ourselves to push the boundaries. We look forward to your continued support and we are honoured to share this journey with you.

Sincerely,

Prof Damian O'Connell | Chief Executive Officer

Co-Chairs

Prof William CHIN
Bertarelli Professor of Translational Medical Science and Medicine Emeritus,
Harvard Medical School

Formerly SVP Discovery Research, Eli Lilly

Prof Benjamin SEET
Group Chief Research Officer
National Healthcare Group

Members

Prof Sze Wee TAN
Assistant Chief Executive BMRC,
Senior Advisor (I&E and
National Platforms), A*STAR

Prof Yee Chia YEO
Assistant Chief Executive
Innovation & Enterprise,
A*STAR

Mr Kian Teik BEH
Chief Executive Officer
National Research Foundation

Dr Danny SOON
Chief Executive Officer, CRIS,
Ministry of Health

Ms Wan Yee GOH
Senior Vice President &
Head Healthcare
Economic Development Board

Prof Say Beng TAN
Executive Director,
National Medical Research Council

Dr Clarice CHEN
Director
Enterprise Singapore

Dr Andreas WALLNOEFER
Chair of EDDC Portfolio
Review Committee
(ex-officio)

Prof Damian O'CONNELL
Chief Executive Officer
EDDC
(ex-officio)

BMRC: Biomedical Research Council | CRIS: Consortium for Clinical Research and Innovation Singapore

Damian O'CONNELL
Chief Executive Officer

Hwee Ching ANG
Deputy CEO

Weidong HAO
Chief Scientific Officer

Soo Yei HO
Chief of Staff

Snow LEE
Discovery Biology

Klement FOO
Discovery Chemistry

Kah Fei WAN
Antibody Technology

Wan Hsin LIM
Chemical Biology

Hannes HENTZE
Translational Sciences

Kunal J. SHAH
Project Management

Venkateshan SRIRANGAM
Development

Veronica DIERMAYR
Asset Dev't Leader

Kantharaj ETHIRAJULU
Asset Dev't Leader

Christophe BODENREIDER
External Innovation

Hsiang Ling TEO
EARO

Hsin-Ee CHIA
BD & Alliance Mgmt.

Connie ER
Operations

02

EDDC in 2023

EBC-129 receives CTA approval from SG HSA in Jan'23 (US FDA approved in Dec'22)

- EDDC Family Day
- Cancer Research Horizons MoU announced

- EDDC Drug Discovery & Dev't Symposium
- Launch of new EDDC brand
- STDR Single Asset Workshop
- 1st patient dosed with EBC-129

- EARO 3-year review published
- BioCurate MoU announced

- EDDC Townhall
- STDR (September) call opened

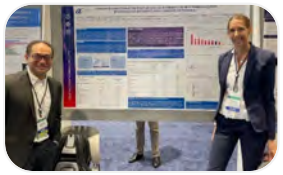
XtalPi Inc. MoU announced

Jan | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec**

- STDR Pilot (Feb) grant call open
- EDDC seminar on Computer-aided Drug Discovery

CSO, Weidong HAO, joins EDDC

- AUM BioSciences doses 1st patient in Phase 2 trial of ETC-206 (AUM001)
- EDDC leadership at BIO US
- EDDC presented ETC-159 at ASCO



- EDDC x co11ab x SGInnovate seminar
- EDDC seminar on pre-clinical in vivo studies for drug discovery and development

- Prof William CHIN awarded Honorary Citizen Award
- Boehringer Ingelheim achieves 1st licensing milestone for novel antibodies
- STDR-Pharma Partnership

- EDDC Townhall
- EDDC-ImmunoScape collaboration announced
- Year-end dinner

ASCO: American Society of Clinical Oncology | CTA: Clinical Trial Authorisation | HSA: Health Sciences Authority | FDA: Food and Drug Administration | MoU: Memorandum of Understanding | STDR: Singapore Therapeutics Development Review

Boehringer Ingelheim Achieves 1st Milestone for Licensed Technology

EBC-129 First-in-Human Clinical Trial Initiated

3 MoUs Signed

- Cancer Research Horizons
- BioCurate
- XtalPi Inc.

Industry Collaborations

2 Research collaborations with a local biotech, ImmunoScape, and an MNC

2 Lead Compounds Declared

Working on **19 Pipeline Projects**

9 Ongoing Collaborative Grant Funded Projects

7 Scientific Publications

Training & Outreach

5 Fellows in-training

Under the NRF Innovation & Enterprise Fellowship Programme

312 Peak physical & virtual attendance at our Drug Discovery & Development Symposium

>6 Workshops & seminars conducted

5 Priority Patent Applications Filed

TARGET TRANSLATION CONSORTIUM

9 Proposals Awarded Through STDR*

EDDC also provided mentors for all projects

**STDR: Singapore Therapeutics Development Review*

10 Local Biotech & Pharma Engaged

EARO

Published 3-year review in July 2023

5 Technology Disclosure Applications Filed

MoU: Memorandum of Understanding | NRF: National Research Foundation | STDR: Singapore Therapeutics Development Review

19 Ongoing Pipeline Projects

11 in Oncology
3 in Infectious Diseases
3 in Ophthalmology
1 in Autoimmune Disease
1 in Fibrosis

13 Small Molecules
6 Biologics

14	3	2
Discovery	Preclinical	Clinical

10 Public Collaborations

2 Industry Collaborations

Addressing diseases relevant to Singapore & Asia

- *Targeting **4 of the top 10** cancers in Singapore*
- *Addressing conditions with unmet need and/or in aging populations e.g. Glaucoma, fibrotic diseases*

Global alliances and new industry collaborations

- *BioCurate*
- *Cancer Research Horizons*
- *ImmunoScape*
- *XtalPi*

Oncology

Infectious Diseases

Fibrotic Diseases

Immunology & Autoimmune Diseases

	Project	Discovery → Preclinical → Clinical	Collaborators
BIC	ETC-159	**Ph1b Dose Expansion** — Colorectal, Ovarian, Endometrial Cancer	Duke-National University of Singapore (Duke-NUS)
FIC	P201905	Sarcoma, Triple Negative Breast Cancer (TNBC)	
BIC	P202019	Non-Small Cell Lung Cancer (NSCLC)	XtalPi Inc.
FIC	P202222	Solid Tumours	Institute of Molecular & Cell Biology, Bioinformatics Institute, National Cancer Centre Singapore, Tan Tock Seng Hospital
BIC	P202302	Solid Tumours	
FIC	P202216	NSCLC	
FIC	P202316	NSCLC	
FIC	P202318	Solid Tumours	
BIC	P202005	Broad Spectrum Coronaviruses	DSO National Laboratories, NUS
BIC	P202119	Broad Spectrum Coronaviruses	DSO National Laboratories
FIC	P202203	Pan-Enteroviruses	
BIC	ETC-569	Idiopathic Pulmonary Fibrosis	
FIC	P202320	Amyotrophic Lateral Sclerosis	

BIC Best in class
FIC First in class

Indication expansion for existing assets

	Project	Discovery	Preclinical	Clinical	Collaborators
Oncology	FIC EBC-129	**Ph 1 started in 2Q2023**	Solid Tumours		National Cancer Centre Singapore Bioprocessing Technology Institute, Institute of Molecular & Cell Biology
	FIC P202314		Solid Tumours		
Ophthal -mology	BIC P202319		Solid Tumours		ImmunoScape
	FIC P202009		Glaucoma		NUS, Singapore Eye Research Institute (SERI)
Immunology & Autoimmune Diseases	FIC P201805		Angiogenic and Fibrotic Retinal Diseases		SERI
	FIC P202215		Angiogenic Eye Diseases		SERI

BIC Best in class
FIC First in class

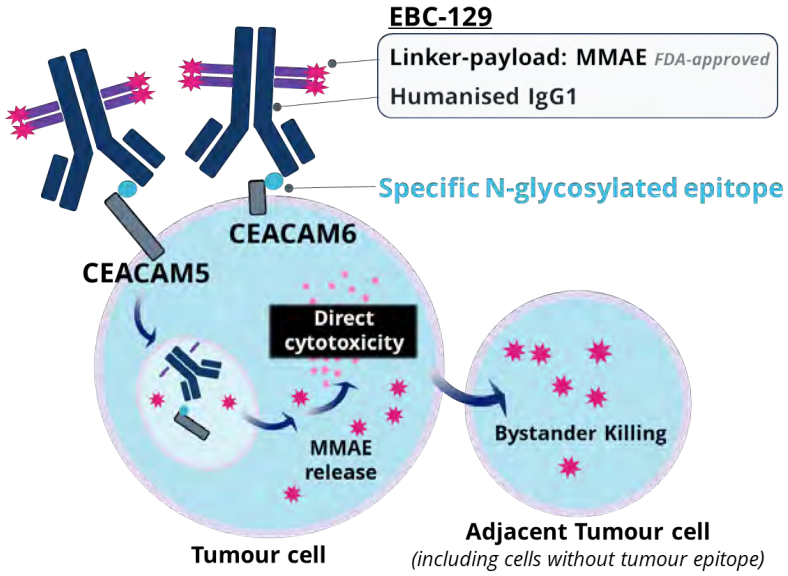
Forming collaborations with key research partners

03

Key Projects & Efforts in 2023

EBC–129 Phase 1 Trial Initiated with First Patient Dosed

EBC-129: PHASE I TRIAL PROGRESSING WELL FOR THE FIRST MADE-IN-SINGAPORE ANTIBODY-DRUG CONJUGATE (ADC)



EBC-129 binds to a glycosylation site conserved on both CEACAM5 & 6 and uses MMAE as its 'payload'. This ADC and the test used for patient selection was discovered & developed through the collaborative efforts of **NCCS, A*STAR's BTI & IMCB, and EDDC**.

BTI: Bioprocessing Technology Institute | CEACAM: Carcinoembryonic Antigen-related Cell Adhesion Molecule | FDA: Food and Drug Administration | HSA: Health Sciences Authority | IHC: Immunohistochemistry | IMCB: Institute for Molecular and Cell Biology | MMAE: Monomethyl auristatin E

EBC-129 is the first made-in-Singapore antibody-drug conjugate (ADC) to enter clinical development.

The FDA and HSA approved the initiation of first-in-human studies for EBC-129 in December 2022 and January 2023, respectively. This study is a multi-centre Phase 1 trial that evaluates the safety and tolerability of EBC-129 in patients with metastatic solid tumours which cannot be treated surgically. An IHC-based companion diagnostic is being used to pre-screen and select patients for the study.

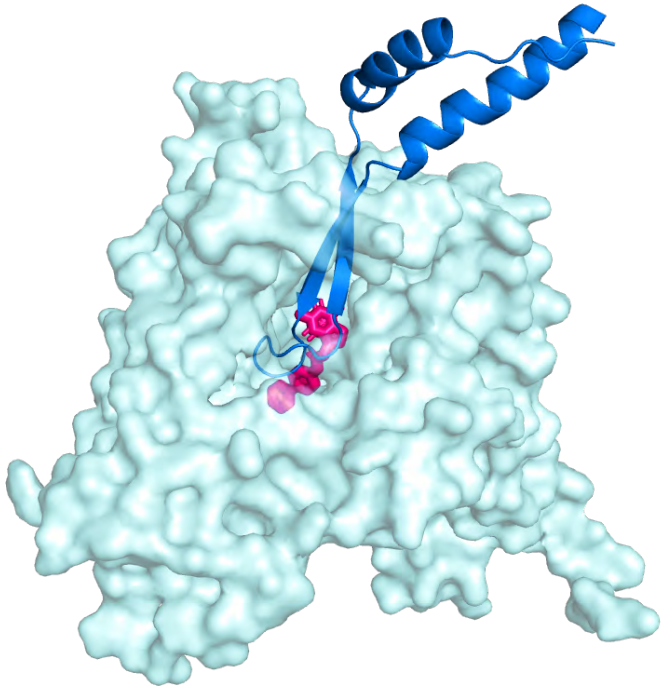
The first patient was dosed at National Cancer Centre Singapore (NCCS) in May 2023 and as of end December 2023, 9 patients have been enrolled in the study at NCCS, the National University Hospital through the National University Cancer Institute Singapore, as well as two sites in the United States.

"Our team at NCCS is proud to have dosed the first patient with this made-in-Singapore ADC in mid-2023. We are excited by the progress of the ongoing trial. The trial is now multi-centre and international and, though preliminary, it has been encouraging to see good tolerability and early signs of efficacy while we evaluate increasing doses. We look forward to reaching the next clinical milestones for the trial in 2024."

Clinical Assistant Professor Matthew Ng, Head, Dept of Gastrointestinal and Neurological Medical Oncology, NCCS

ETC-159 Shows its Best-in-Class Potential in Phase 1B Trial

PROMISING RESULTS FROM ETC-159's PHASE 1B TRIAL



ETC-159 is a small molecule inhibitor of O-acyl transferase porcupine (PORCN), jointly developed by EDDC & Duke-NUS. An EDDC-developed diagnostic test, manufactured & clinically validated at POLARIS @ A*STAR's GIS, supported by DxD Hub, is being used for patient selection.

Duke-NUS: Duke-National University Singapore | GIS – Genome Institute of Singapore | DxD Hub – Diagnostic Development Hub| MSS: microsatellite stable | pMMR: proficient mismatch repair | NUH: National University Hospital | NCIS: National University Cancer Institute Singapore | NCCS: National Cancer Centre Singapore

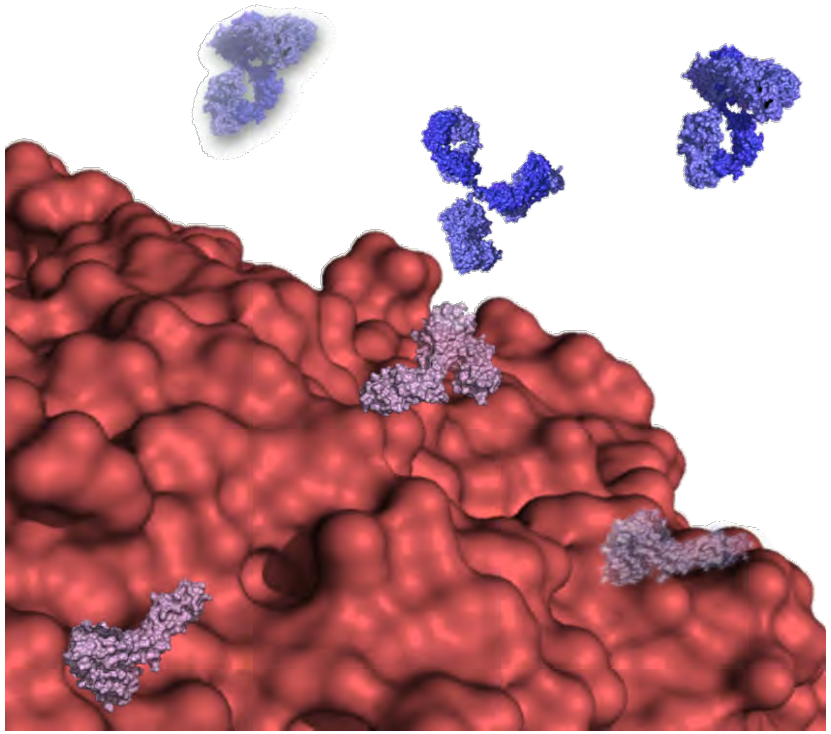
ETC-159 entered Phase 1B dose expansion in mid-2022 with the aim of evaluating its preliminary efficacy and safety (i) as a monotherapy in MSS/pMMR colorectal cancer (CRC) patients who have gene fusions involving R-spondin 2 or 3 and (ii) in combination with the immune check-point inhibitor pembrolizumab in MSS/pMMR CRC, ovarian and endometrial cancer patients. The trial was conducted at NUH through the NCIS, NCCS and six sites in the United States.

The studies showed that ETC-159 in combination with pembrolizumab has a favourable safety profile in patients with advanced tumours. The combination showed the most promising efficacy in gynaecological cancers (ovarian and endometrial cancer) where the disease control rate (≥12 weeks) was 50% in 6 evaluable ovarian cancer patients and 33% (1/3) in endometrial cancer patients, respectively. Two ovarian cancer patients showed a partial response, of whom one of these patients was previously resistant to pembrolizumab treatment after 7 prior lines of treatment. As of end December 2023, this patient has remained in remission for 9 months from when she started treatment on ETC-159 & pembrolizumab.

"The results from our Phase 1B studies demonstrated that ETC-159 has a superior safety profile at clinically relevant doses as a monotherapy, and we have seen intriguing signs of clinical benefit in combination with checkpoint inhibition, especially for platinum resistant ovarian cancer patients. Gynaecological cancer KOLs have found the results exciting, and we will look to continue to build ETC-159's evidence base in this area with existing and new partners."
Dr Veronica Diermayr, Asset Development Leader, EDDC

Milestone Reached for Technology Out-licensed to Boehringer Ingelheim

FIRST LICENSING MILESTONE MET FOR NOVEL ANTIBODIES



These novel antibodies exclusively target antigens that are highly expressed on cancer cells but are absent on normal healthy tissues.

A panel of innovative, tumour-specific antibodies resulting from a collaboration involving EDDC, A*STAR's Genome Institute of Singapore (GIS), Institute of Bioengineering & Bioimaging (IBB) and Singapore Immunology Network (SIgN), with support from the Singapore Gastric Cancer Consortium, was out-licensed to Boehringer Ingelheim, a leading research-driven biopharmaceutical multinational company, in mid 2022.

Boehringer Ingelheim aims to use these antibodies to direct therapeutic effector mechanisms such as antibody-drug conjugates and T-cell engagers exclusively to tumour cells, and so develop a range of highly targeted cancer treatments across a range of solid tumours. In October 2023, Boehringer Ingelheim shared that it had reached its first licensing milestone towards the development of these antibody-based therapies.

"This milestone is a testament to the positive ongoing partnership we have with Boehringer Ingelheim and highlights the potential impact Singapore can achieve through the development of quality molecules and multi-institutional teamwork."
Prof Damian O'Connell, CEO EDDC

Development Of Large Molecule Therapeutics for Ophthalmology Indications

ONGOING COLLABORATIONS TO ADDRESS UNMET NEEDS IN EYE DISEASES

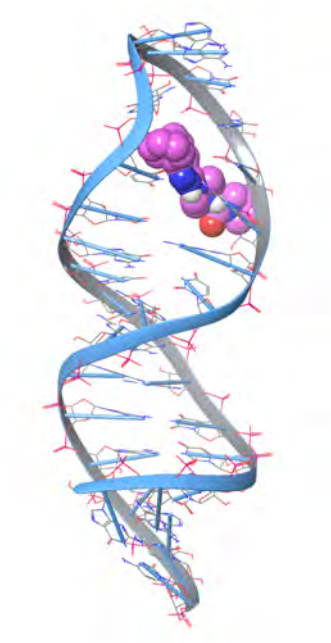
EDDC has been collaborating with Associate Prof Wang Xiaomeng and Prof Tina Wong at the Singapore Eye Research Institute (SERI), as well as a partner at the National University of Singapore (NUS), to develop large molecule assets for eye diseases that can lead to blindness. Associate Prof Wang also has joint appointments at Duke-NUS and A*STAR's Institute for Molecular and Cell Biology.

Through several projects, EDDC and SERI are jointly developing antibody and protein-based therapeutic compounds that address novel targets implicated in angiogenic eye diseases like age-related macular degeneration, proliferative diabetic retinopathy as well as glaucoma, which leads to damage to the optic nerve. Positive results have been obtained so far and the compounds are progressing to expanded in vivo efficacy studies. Through this work, the teams aim to address unmet needs in these diseases, including providing options to patients who become resistant to available therapies.

"I want to express my sincere gratitude for the positive working relationship we have developed. The complementarity of our capabilities and the shared commitment to the project's success have made this collaboration a true pleasure. I eagerly look forward to the continued progress and success of our project."
Professor Tina T. Wong, Director of Clinical Translational Research, SERI

"I greatly enjoyed working with the EDDC team. By taking advantage of our complementary expertise, we have established two successful collaborations and successfully secured a Singapore Therapeutics Development Review grant. I am excited about the future of our collaboration."
Associate Prof Xiaomeng Wang, Director of Laboratory and Translational Research, SERI

EDDC's Innovative Small Molecule Platforms



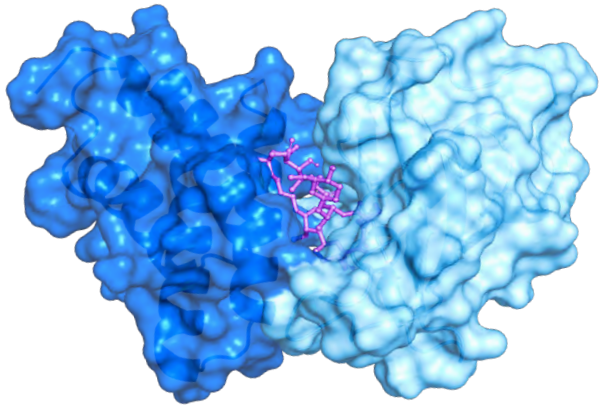
TARGETING RNA WITH SMALL MOLECULES

EDDC has been leveraging our medicinal chemistry and chemical biology expertise to develop small molecules that can directly target RNA, hence opening a new, vast and relatively untapped target space. Our goal is to address undruggable protein targets and RNA that drive diseases.

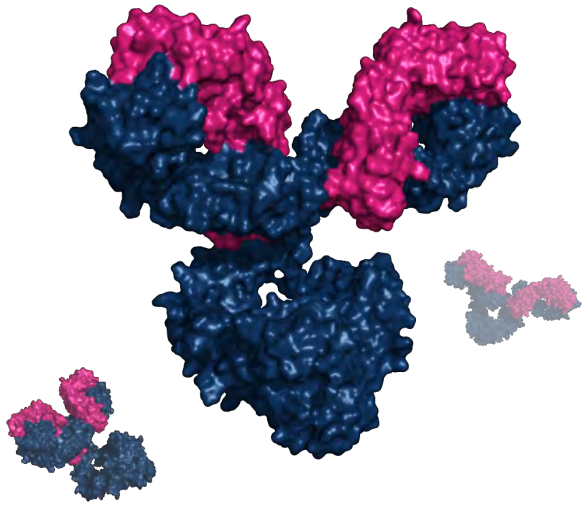
A combined team comprising colleagues from our Discovery Biology, Chemical Biology and Medicinal Chemistry functions, have established a suite of hit screening and validation workflows that allow us to identify small molecules that can bind to and degrade RNA, affect RNA splicing or modulate RNA function. The team is also establishing collaborations with local and international partners to integrate AI-based capabilities and disease biology know-how to jointly address novel RNA targets.

SMALL MOLECULE DEGRADERS

EDDC's scientists have also established an in-house platform with workflows to identify small molecules that can induce degradation of protein targets. The team aims to identify monovalent small molecule degraders like molecular glues and destabilisers to address proteins that are deemed "undruggable" using conventional inhibition and to develop differentiated assets for "hot" targets. The team proposed and initiated projects on two oncology targets in 2023.



EDDC's Innovative Large Molecule Platforms



HIGH THROUGHOUT ANTIBODY DISCOVERY (HiTAD)

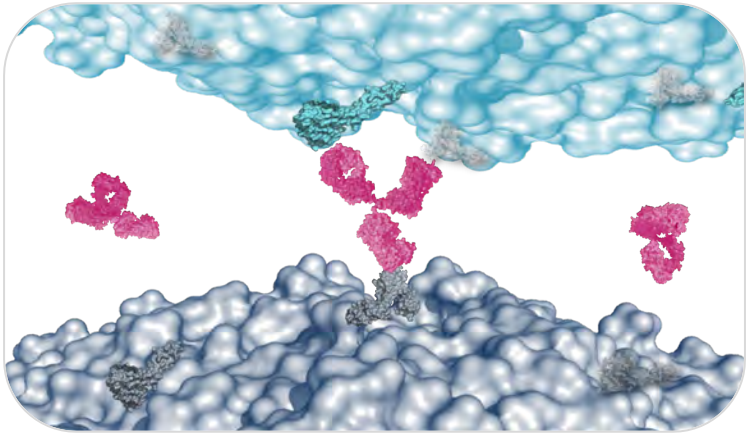
EDDC's antibody discovery effort is powered by its HiTAD platform. It combines an optimised immunisation strategy with automated single B-cell cloning methods to efficiently and rapidly sample the immune B-cell repertoire at the single clone level. The platform yields high hit rates with diverse hits binding to a range of epitopes. Shortlisted antibodies are highly selective, even against close homologues, and retain their function and potency post-humanisation.

In 2023, the team enhanced the HiTAD platform by integrating an expanded range of developability assessments, automated the flow, quality checks and streamlining of data from multiple sources. Through these, the team can now identify high quality antibody therapeutic candidates and generate compelling data packages more effectively.

INNATE IMMUNE CELL ENGAGERS

The **Antibody-enhanced Innate Modulation (AIM) platform** leverages EDDC's in-house end-to-end biologics discovery and validation engine to identify disease-modifying biologics that can boost the activity of innate immune cells. While the adaptive immune system has become a hot area in recent years with the success of CAR-T therapy, the innate immune system, comprising the body's first line of defence against disease, remains full of untapped opportunities.

The AIM platform harnesses the capabilities of Natural Killer cells, a critical innate cell population key to protecting the body against pathogens and transformed cells, through a novel approach. The team has produced compelling data in oncology and is currently exploring platform applications in other indications.



Integration of AI and Data-driven Approaches with Our Wet-lab Capabilities

EDDC has integrated in silico approaches across our processes, as illustrated below, with the aim of enhancing target-disease understanding, and accelerating and improving the "hit rate" of our drug discovery efforts. **Our wet-lab approaches run in parallel with, and serve to validate, these computational approaches**.

Target ID & Validation → **Screening & Hit Generation** → **Lead Generation & Optimisation** → **Preclinical Studies**

UNDERSTANDING DISEASE LINKAGES & IDENTIFYING TARGETS, BIOMARKERS

Access to public, and proprietary collaborative and in-house data

Systemic mining of data for:

- Evaluation of target proposals
- In silico discovery of novel targets for antibody development
- Identifying diseases for indication expansion of pipeline assets
- Patient stratification & disease sub-group positioning

ACCELERATING HIT FINDING & COMPOUND OPTIMISATION

Small molecule

- Druggability assessment to guide hit finding strategy
- Machine Learning-assisted virtual screening
- Structure-based modeling to guide hit-to-lead
- AI-guided library expansion

Biologics

- Structure-guided rational design of fusion proteins
- Structure and sequence based in silico antibody engineering, humanisation and optimisation

IN VITRO AND IN VIVO PK /EFFICACY

- In silico predications of ADME properties
- Modeling and simulation capabilities for pharmaco-kinetics, pharmacodynamics and human dose predictions

IN-DEPTH UNDERSTANDING OF BIOLOGY/MECHANISM OF ACTION

- High content cellular image analysis facilitated by deep learning
- Establishing a high-throughput transcriptomics platform *(for e.g. profiling off-target effects)*

Optimising Data Workflows to Enable Future Machine Learning-based Discoveries

EDDC has set for itself the long-term goal of creating an integrated repository of data sourced from all wet-lab, preclinical and clinical studies. The data will be organised and structured so that it is **F**indable, **A**ccessible, **I**nteroperable, **R**eusable, enabling the training and development of Machine Learning (ML) models in the future.

We laid the first brick for this data foundation in 2023 through the **optimisation of data workflows in our Large Molecule discovery group:**

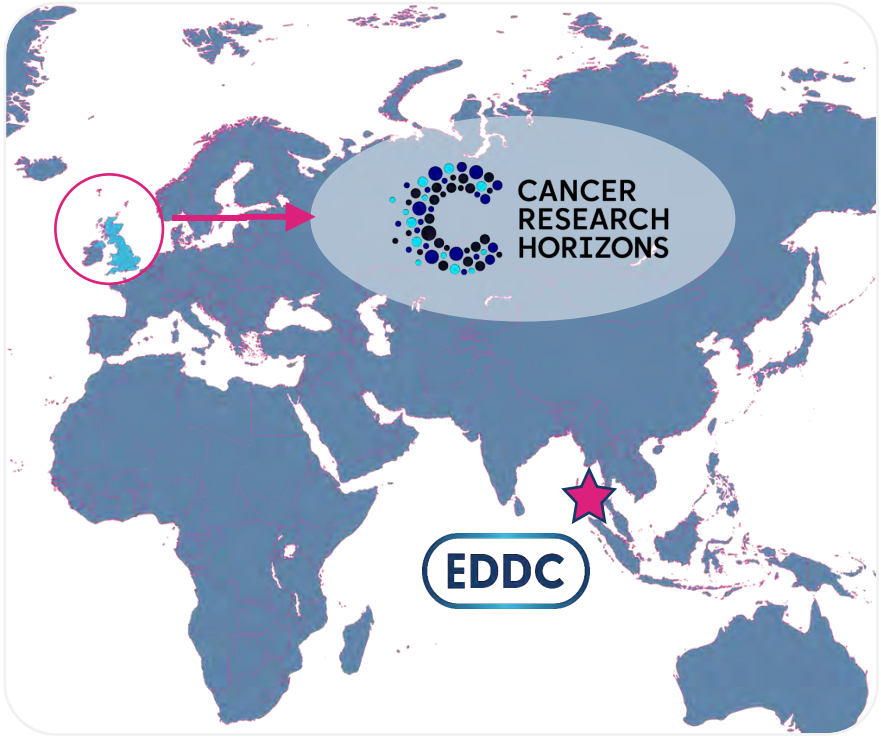
- **Automated data handling :** Raw data across key instruments are now parsed and collated automatically and directly, replacing the need for manual data transfer.
- **Integration with Electronic Lab Notebook (ELN)** : Methods and results from the ELN used by research staff have also been integrated into the same database.
- **Browser-based user interface built :** A centralised interface was developed for querying, visualising, and qualifying the above data. This enables more rapid data-driven decision-making.

In 2024, this work will be expanded further within the Large Molecule discovery function and will also begin in the Small Molecule teams.

04

Innovation through Collaboration

New Global Alliance with Cancer Research Horizons



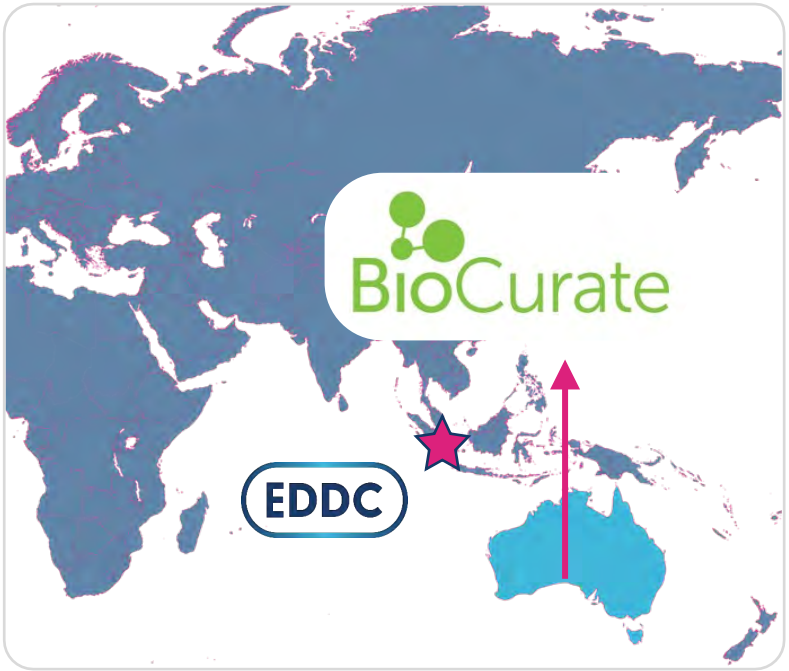
To tackle diseases with global needs, EDDC is partnering with drug discovery organisations around the world with a common vision.

In 1Q2023, EDDC formed a 5-year alliance with Cancer Research Horizons, the innovation engine of Cancer Research UK – the world's largest charitable funder of cancer research.

Through this partnership, EDDC and Cancer Research Horizons are defining collaborations that leverage the complementary capabilities, platforms and technologies from both partners to accelerate the translation of cancer research into viable and improved therapy options for patients. Both parties have determined areas of mutual interest and are further identifying novel cancer biology and possible joint efforts in target identification and validation, drug discovery and development.

"... cancer is a global problem and solving it is dependent on us deepening our collaboration with like-minded organisations across the globe. This is why we wholeheartedly welcome the opportunity to work with EDDC which shares our drive to make a real impact on the way we treat and care for people with cancer." **Tony Hickson, Chief Business Officer for Cancer Research UK and Cancer Research Horizons** *(From press release)*

New Global Alliance with BioCurate



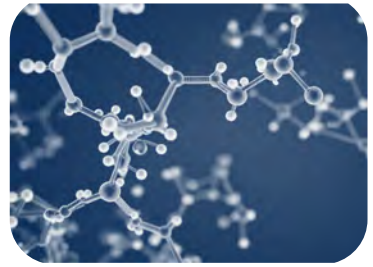
EDDC has also formed a strategic partnership with BioCurate, a bold, collaborative venture, jointly formed by the University of Melbourne and Monash University, with support from the Victorian State Government. BioCurate identifies promising biomedical research discoveries and manages their translation into high quality preclinical candidates with the aim to develop potential novel human therapeutics.

EDDC and BioCurate are identifying co-development opportunities in a range of disease indications, combining the capabilities and networks of both organisations. Both parties will share complementary scientific and business development expertise between their teams. This partnership is expected to expand the number and types of projects both parties can support, by increasing the knowledge, expertise and resources that each organisation has access to.

"Collaboration with organisations of EDDC's calibre is a strategic priority for BioCurate, leveraging complementary strengths and capabilities to ours, and our Shareholders. These partnerships extend what we're capable of doing and increase our chances of success in translating biomedical discoveries into quality therapeutic candidates." - **Dr Eric Hayes, Director of Partnerships, BioCurate** *(From press release)*

Collaborations with Publicly Funded Research Institutions in Singapore

Small Molecule Discovery EDDC is collaborating with **A*STAR's IMCB and BII**, as well as **TTSH and NCCS** in a project supported by the Singapore Therapeutics Development Review. The "dual track" project aims to find small molecule protein-protein interaction modulators as well as degraders of a novel oncology target. As of end 2023, the team is on track to complete its first set of deliverables.

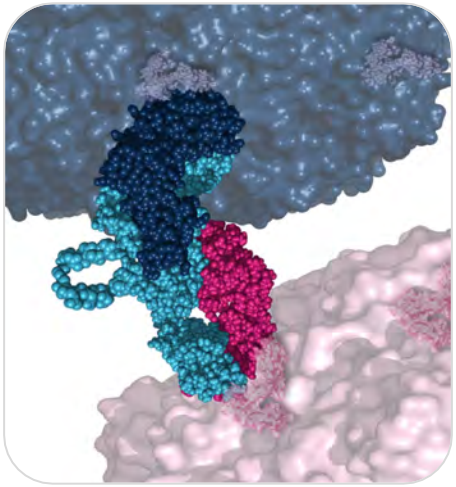


TELMabNet EDDC is collaborating with **NTU, TTSH and overseas centres** to develop potential drug candidates against *M. abscessus* (*Mab*) infections under the TELMabNet (Targeting Energy of Life of Mycobacterium abscessus Network) programme, funded by the National Research Foundation and led by Prof Gerhard Grüber at NTU. *Mab* is one of the most common rapidly growing non-tuberculous mycobacteria species and is also regarded as one of the most antibiotic-resistant mycobacteria. This project was initiated in end 2022 and has reached hit validation stage as of end 2023.

Autoimmune Diseases EDDC has been planning a collaborative project with **two A*STAR institutes and two hospitals**, which will be launched in 1Q2024. This pilot programme aims to apply CRISPR screening and single cell RNA sequencing technologies to generate patient-derived data for the identification of novel targets in autoimmune diseases like lupus and inflammatory bowel disease.

BII: Bioinformatics Institute | IMCB: Institute of Molecular & Cell Biology | TTSH: Tan Tock Seng Hospital | NCCS: National Cancer Centre Singapore | NTU: Nanyang Technological University

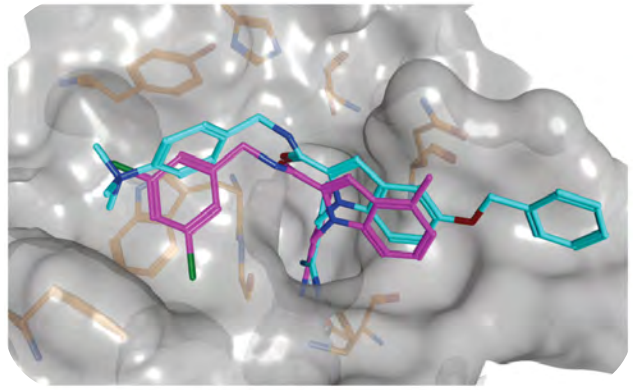
Local and International Industry Partnerships



ImmunoScape EDDC and ImmunoScape, an A*STAR biotechnology spin-off focused on next-generation T Cell Receptor (TCR)-based immunotherapies, initiated a collaboration to jointly develop innovative off-the-shelf TCR-based bispecific molecules. These molecules contain two distinct binding sites and are engineered to bind and activate T cells, redirecting them towards tumour sites for interaction with cells expressing the unique tumour-specific antigen through the TCR. This approach enables the patient's own T cell repertoire to selectively eliminate cancer cells. Such off-the-shelf molecules do not require engineering and manufacturing of the patients' own T cells, which can make them accessible to a much broader patient population, with lower production costs and shorter timelines to reach patients.

In this collaboration, EDDC will be applying its expertise in therapeutic protein design and antibody engineering to develop these novel TCR-based bispecific molecules, using TCR candidates provided by ImmunoScape.

XtalPi EDDC and **XtalPi Inc. ("XtalPi")**, a pioneering pharmaceutical technology company powered by artificial intelligence (AI) and automation, have expanded an initial collaboration to discover novel treatment candidates for non-small cell lung cancer, with an MoU to encompass potential new projects on the application of automated synthesis solutions and large language models (LLM).



The two parties will be exploring collaborations in automated chemical compound synthesis and AI-driven drug discovery, including the application of XtalPi's robotics and AI-driven drug design capabilities such as automated library synthesis, to EDDC's research capabilities. XtalPi and EDDC will also look into jointly exploring the potential of advanced AI models, including LLM, to drive innovation in biopharmaceutical discovery.

Re-visit the talks from the event on our EDDC Insights page!

EDDC's 2nd Drug Discovery and Development symposium brought together over 310 in-person and online participants across Singapore. The two-day event included talks by EDDC colleagues, scientists from local biotechs Automera and Hummingbird Bioscience, as well as multi-nationals MSD and Boehringer Ingelheim. The speakers covered key considerations and emerging trends in small and large molecule drug discovery and development.

"All the topics were very interesting, and the talks were very good, with a lot of information about drug discovery programmes in Singapore." – Event attendee

"The case studies were very helpful in helping me as a lab scientist understand considerations for drug/therapeutics development that we would not normally consider in a lab setting." – Event attendee

05

Developing Talent

The EDDC Team

EDDC's success in initiating, progressing and commercialising our drug discovery and platform innovation projects stems from our committed & talented colleagues and the positive working relationships between our R&D and non-R&D groups.

Read their thoughts on 2023 on the right!

138 Employees

112 R&D staff | **26** Non-R&D staff

45% Doctorate holders,
of which **21%** are scholars

40% with bio-pharma experience

30 in Chemistry fields

29 in Biology fields

11 in Biologics

19 in Drug Development
including ***3*** *Clinicians, and*
2 *Medical Directors*

My reflections for 2023 can be crystallised into 3 "F"s:
FRUITFUL because much was gleaned from working on various projects. **FULFILLING** because bridging scientific gaps and drug discovery work is meaningful. **FUN** because of the camaraderie and new friends made working cross-departments.

Liew Si Si | Research Fellow

Working with multi-disciplinary teams in EDDC has motivated me to learn to consider different perspectives. Advancing a novel asset (EBC-129) to phase 1 clinical trials was the biggest achievement of 2023 for me, and likely for EDDC too. I look forward to contributing to more interesting drug discovery projects.

Vishal Pendharkar | Senior Research Manager

In 2023, I marked my one-year milestone in my BD role at EDDC. I am grateful for the opportunity to grow and collaborate with intelligent and dedicated colleagues. I am excited to contribute towards building more strategic partnerships in this drug discovery team effort!

Low Choon Bing | Manager, Business Development

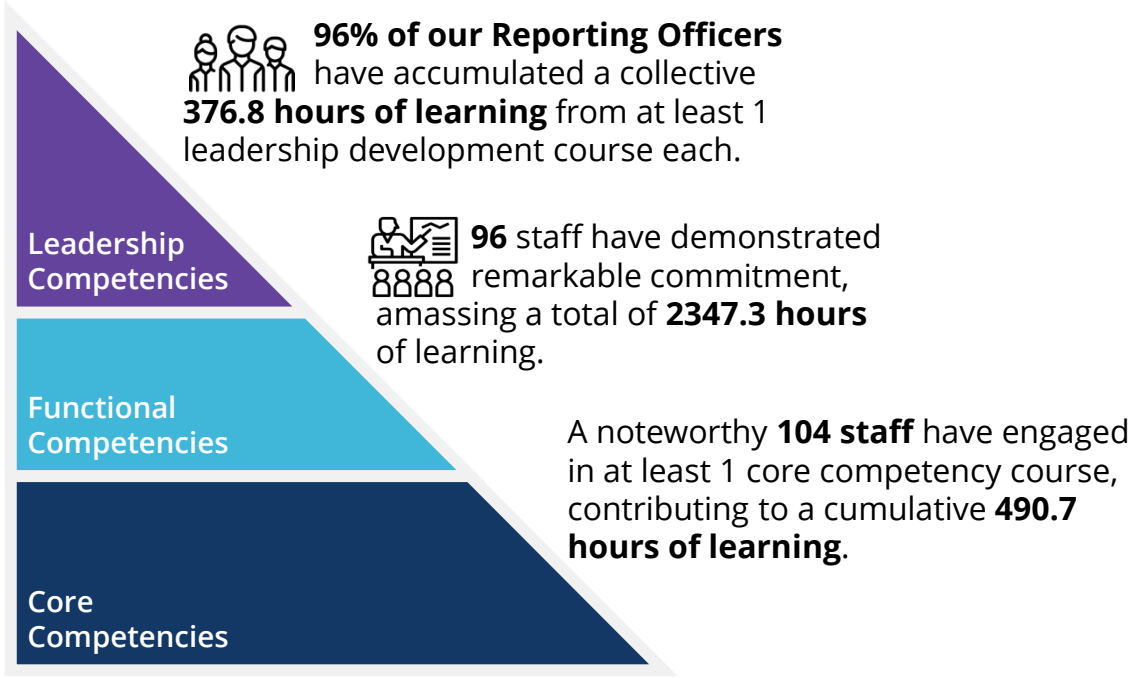
Stepping out of the pandemic, 2023 has been an exciting year. I benefited greatly from witnessing drug discovery & development in action and through guidance from my colleagues. I look forward to being a contributing member of the team that brings innovative ideas closer to the bedside of the patients.

Tan Bee Huat | Senior Project Manager, Project Management

External Training and Development

EDDC staff actively participated in courses identified by A*STAR Leadership & Organization Development (L&OD) department. This included training to develop core, functional and leadership competencies, as well as courses for personal development.

92.5%* of EDDC staff attended a learning activity in 2023 **91% in 2022*



96% of our Reporting Officers have accumulated a collective **376.8 hours of learning** from at least 1 leadership development course each.

96 staff have demonstrated remarkable commitment, amassing a total of **2347.3 hours** of learning.

A noteworthy **104 staff** have engaged in at least 1 core competency course, contributing to a cumulative **490.7 hours of learning**.

L&OD developmental framework for People Development.

In-house Training and Development

EDDC's Quality Management System (QMS), instituted by our Quality Assurance (QA) team in 2022, documents all policies, processes & responsibilities. We employ an FDA Part 11 compliant online system, MasterControl, as the central platform for all EDDC staff to access these controlled documents.

To ensure that EDDC's quality standards in operations and R&D are maintained and improved, MasterControl is used to assign compulsory training to specific job functions, with examinations designed to evaluate proficiency in key content.

Item	Details
Total number of Standard Operating Procedures (SOPs)	63
Total number of Work Instructions	88
Total QMS training courses	235
Examinations for important training courses	A*STAR Confidentiality Policy; A*STAR Compliance Awareness; EDDC Personal Data Protection; EDDC Procurement Guide; ISO 9001:2015

I&E Fellowship Programme (IFP)

The IFP is a full-time fellowship programme funded by the National Research Foundation (NRF) to grow a pool of deep-tech talent in Singapore who can translate nascent technologies to the market. The IFP also aims to develop industry-relevant skillsets in our R&D talents.

SG Academies South-East Asia Fellowship (SASEAF) Programme

The SASEAF is a 2-year programme funded by the NRF, administered by the Singapore National Academy of Science (SNAS), in partnership with the Academy of Medicine Singapore and the Academy of Engineering Singapore. It aims to facilitate meaningful collaborations between Singapore's distinguished research institutions and researchers from South-East Asia.

From left to right:
Oon Chern Ein, Yeo Xun Hui, Tiffany Scully, Alison Tan, Vincent

Absent from group photo:
Cai Yichao

Tiffany Scully, IFP *Business Development & Alliance Management*

"Over the last few months as an IFP fellow at EDDC, I've had the opportunity to learn about and get hands-on experience in areas like business development and project management. I find the challenge wholly satisfactory and exciting as my motivation for joining was to transition out of research and explore other aspects of translating discoveries to new therapies that can be used in the clinic."

Vincent, IFP *Discovery Biology, Inflammation & Immunology*

"Working at EDDC has allowed me to further improve my craft scientifically by being involved in different high-quality projects. Outside of my own expertise, the IFP programme offered a unique opportunity for me to step out of my own comfort zone and be mentored in the domains of project management and business development. The work comes with a difficult yet fulfilling set of challenges, which I am ready to tackle and overcome to be the better version of myself."

Oon Chern Ein, SASEAF *Discovery Biology, Oncology*

"I am an academic and in joining the SASEAF programme, I hoped to acquire relevant skills and perspectives to translate academic discoveries into tangible benefits for humanity. The work these past few months have allowed me to explore how to leverage my existing skills and knowledge to contribute effectively while also acquiring new insights from the industry. My experience thus far has been wonderfully engaging. I believe the work here will allow me to expand my worldview on this industry and further drive my academic pursuits as a translational scientist."

Human Capital for The Community

EDDC has nurtured talent who are now driving drug discovery innovation in roles across local biotechs and venture capital. Read how the EDDC experience has shaped them for the roles they currently play in the community!

Pearly Ng
Head of Chemistry, Automera

"Working on various drug discovery projects at EDDC in different roles has provided me with exposure and opportunities to evolve from a medicinal chemist to a drug discovery scientist. This experience has broadened my perspectives and taught me to consider drug discovery projects not only from a technical standpoint but also from a strategic and business perspective."

Johnathan Ng
Assistant Vice President, Xora Innovation

"I am grateful for the many opportunities at EDDC which allowed me to hone my skills in drug discovery and commercialisation. As a life sciences investor, the goal remains the same - to be a prudent steward of resources by delivering financial return and benefit for patients."

Tan Ban Xiong
Portfolio Director, Axcynsis Therapeutics

"Working at EDDC had paved the way for success in my subsequent stint at a fast-paced biotech startup. While at EDDC, I had the opportunity to learn about the scientific, clinical, and commercial aspects of the industry. It provided me the skillset and fortitude needed to spearhead platform development, lead programmes, and foster team cohesion in my new roles."

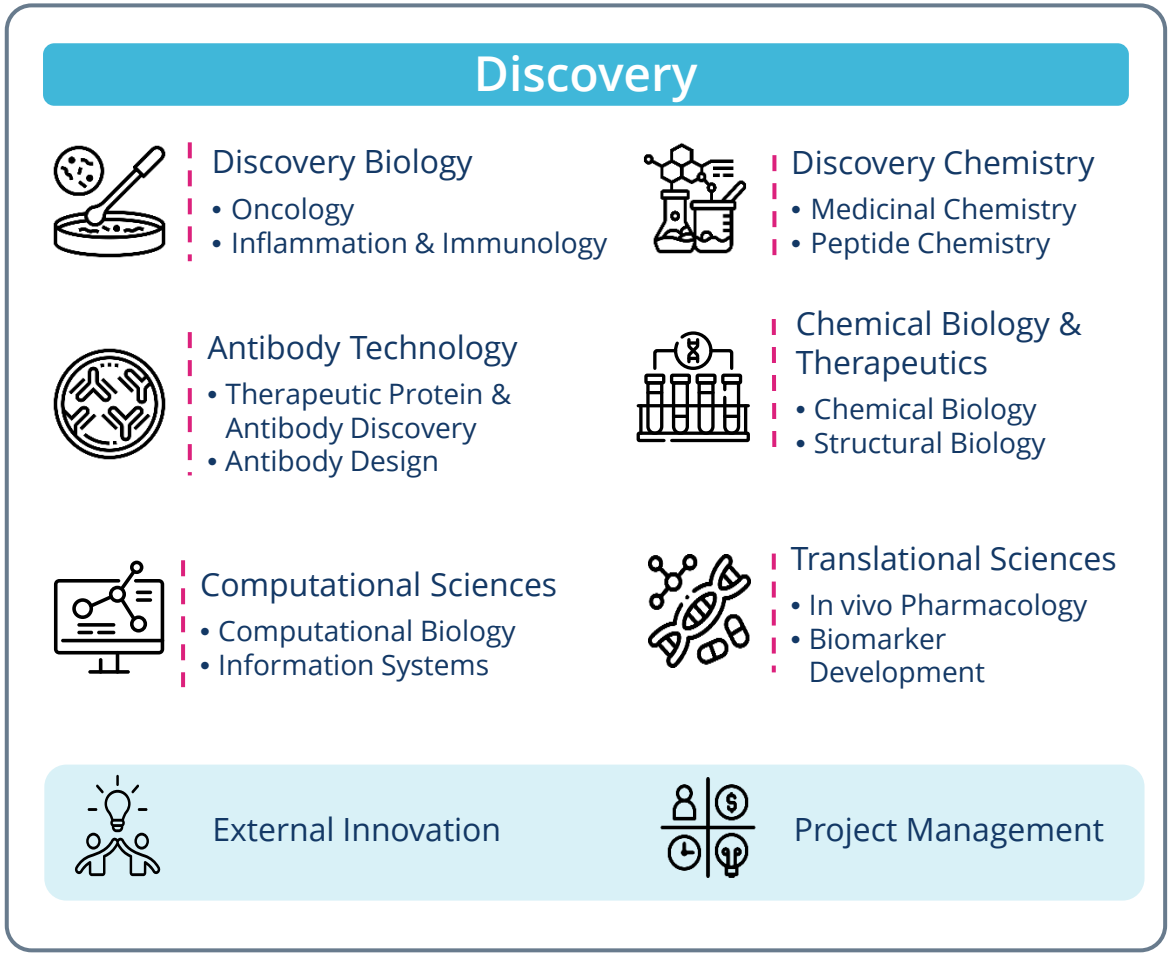
Alvin Hung
Venture Partner, Trinity Innovation Bioventure Singapore

"My experience at EDDC has given me valuable insights into the scientific realm of drug discovery. I hold dear the relationships forged with EDDC colleagues, now close friends, and the experiences that persist in molding my journey in therapeutic science. May we continue making impactful contributions to Singapore's therapeutics ecosystem as a team in 2024."

06

Meet Our Team

EDDC's Renewed Discovery Organisation



To position EDDC for greater success in the coming years, the Discovery Group was re-organised, with new teams and functions to support our strategic thrusts into the next frontiers of drug discovery and development – harnessing AI, data, and automation in our processes, bringing our capabilities in targeting RNA to the next level, as well as developing small molecule degraders.

Our **Discovery organisation** now features

- A combined **Discovery Biology** group that will build internal know-how in thematic areas in Oncology and Inflammation & Immunology
- An expanded **Chemical Biology** team integrating our Structural Biology capabilities
- An integrated **Computational Sciences** team to drive our AI and data-driven efforts
- A new **External Innovation** function that will actively identify new project opportunities from external academic and commercial partners

Discovery Biology

- Inflammation & Immunology
- Oncology

From left to right: **Vincent, Deepika Raman, Ang Xiaoman, Ke Zhiyuan, Oh Qin Yao, Carol Koh, Elaine Choo, Joma Joy, Perlyn Kwek, Ang Qi An, Lee Le Tian, Fong Jiayi, Visalatchi Thaigarajan, Snow Lee, Ng Fui Mee, Fanny Teo, Liu Boping, Ong Shi Min, Wang Si Fang, Oon Chern Ein, Kang Zi Han, Yeo Xun Hui.**

Absent from group photo:
Chng Song Hui, Manuel Suter, Lim Siew Pheng, Tan Chong Teik

Inflammation & Immunology

The Inflammation and Immunology (I&I) group was formed in 2023 to consolidate diverse expertise within EDDC, propelling innovative initiatives in the I&I therapeutic domain. This group is strategically positioned to enhance EDDC's proficiency in immunology by capitalising on our existing knowledge in developing human PBMC-derived cultures. This team of scientists is accountable for formulating and executing cell-based functional assays including immunophenotyping, immune cell activation and suppression that can be expanded into complex co-culture systems (i.e. immune cells and other cell types of interest).

Oncology

The Oncology Discovery team focuses on discovering more effective anti-cancer therapies in indication areas with high unmet need, including solid cancers such as lung, gastric, and colorectal cancers. The group consists of scientists with deep oncology expertise who drive and implement project activities aimed at identifying and evaluating therapeutic candidates. These include, but are not limited to, various in vitro experimental capabilities such as biochemical, biophysical, 2D/3D or co-culture cell-based assays using state-of-the-art instruments.

Discovery Chemistry

- Medicinal Chemistry
- Peptide Chemistry

From left to right: **Subramanyam Vankadara, Hannah Toh, Ronald Toh, Sandra Sim, Klement Foo, Liew Si Si, Yang Hai Yan, Tan Li Hong, See Yiyang, Xu Weijun, Eileen Tay, Juliana Mohammad, Padmanabhan Anbazhagan, Diane Lim, Brian Chia, Grace Lin**

Absent from group photo:
Frankie Mak, Joseph Cherian

Medicinal Chemistry

The Medicinal Chemistry team is central to EDDC's small molecule drug discovery effort, through generating compounds that can become therapeutic candidates to address human diseases. Working closely with Discovery Biology colleagues, the team engages early in project strategy planning, and supports the progression of projects from hit triage to lead optimisation. The drug design process is accelerated by our **computational chemists** who help predict and rationalise protein-ligand interactions using computer-aided drug design methodologies.

Beyond our core, the team actively explores new innovations and advances in chemistry to enhance EDDC's internal work processes. The team also proposes new biological targets, finds alternative mechanisms of inhibiting targets, and creates innovative platforms.

Peptide Chemistry

The Peptide Chemistry team is an agile 2-person drug-hunting team specialising in peptides, peptidomimetics and antibody-drug conjugate drug design, discovery & development, with a special focus on initiating and delivering new drug assets into EDDC's pipeline. The team was also instrumental in co-designing a SARS CoV-2 peptidomimetic protease inhibitor which was out-licensed in 2022.

Antibody Technology

- Therapeutic Protein & Antibody Discovery
- Antibody Design

From left to right: **Jessie Lim, Simone Dorfmueller, Yeo Yee Khoon, Tabitha Tan, David Voo, Nur Quraishah Adnan, Wan Kah Fei, Yap Thai Leong, Chiam Poh Cheang, Sim Wei Qiang,**

Absent from group photo:
Samantha Wong. Joey Xu,
Koh Xin Yu

Therapeutic Protein & Antibody Discovery

Therapeutic Protein & Antibody Discovery (TPAD) scientists employ a High-Throughput Antibody Discovery (HiTAD) Platform to effectively generate, select, produce and evaluate protein-based large molecules. This involves employing an optimised immunisation strategy and an automated single B-cell cloning method for the efficient sampling of the immune B cells repertoire. The High-Throughput Therapeutic Protein (HTTP) platform, which combines iterative cycles of computer-aided structural rational design, Fc plug-and-play, optimal protein expression and integrated developability assessment, facilitates the generation of therapeutic-quality large molecules with minimal experimental investment and quicker timelines. Both platforms are integrated with a centralised data management system, providing high quality data packages that allow clinically-relevant, data-driven decision-making.

Antibody Design

The Antibody Design team focuses on developing novel engineered antibodies for applications in different diseases or treatment modalities. Using a mix of computational and empirical approaches, they study how the sequence diversity of amino acids govern protein function and structure. Protein sequences, similar to biological grammar and syntax, can be used to inform the design of new proteins with improved functions and properties.

Computational Sciences

- Computational Biology
- Information Systems

From left to right: **Koe Chwee Tat, Tan Shan Ho, Sun Miao, Li Hankun**

Absent from group photo:
Yaron Turpaz, Vamshidhar Gangu, Cai Yichao

Computational Biology

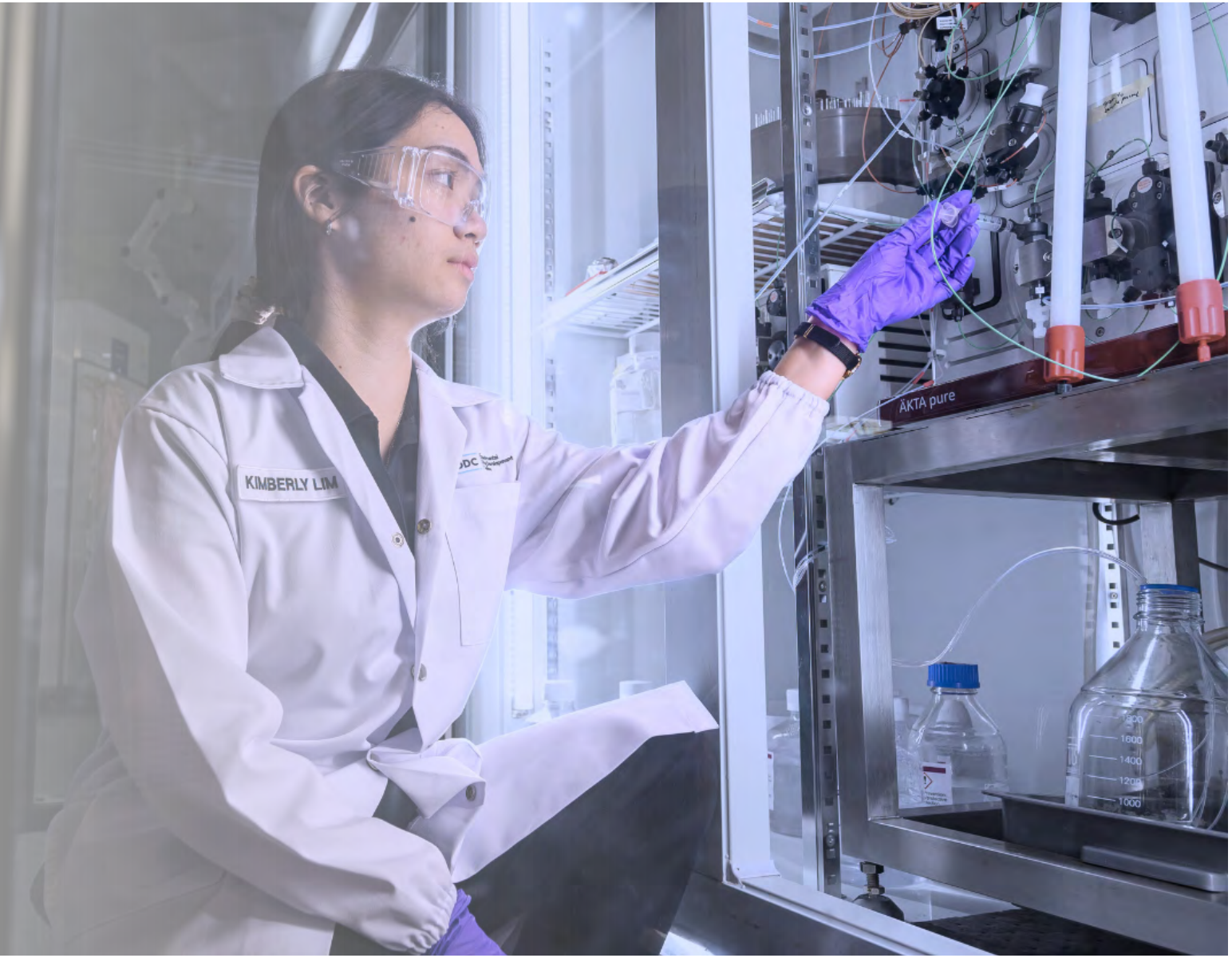
The Computational Biology team is responsible for developing and incorporating computational methods, analytical workflows and data-driven approaches into EDDC's drug discovery & development process. Their scope of work involves data integration, harmonisation and synergising with bioinformatics, advanced data analytics and machine learning. The team also drives the development of high-throughput 'Omics data platforms and predictive models to guide decision-making and in silico hypothesis generation at EDDC. The team works very closely with cross-functional colleagues and external partners to integrate in silico and wet-lab approaches to build a machine learning-ready data foundation, and to tackle challenges across important drug discovery stages.

Information Systems

The role of the information systems team includes spearheading software development initiatives and providing applications support to facilitate the drug discovery process. To efficiently manage and analyse data across the organisation, the team is responsible for the establishment of a robust IT infrastructure capable of handling the complex and diverse datasets inherent in pharmaceutical research. In essence, the Information Systems team acts as a technological vanguard, employing their expertise to bridge the gap between drug discovery and the rapidly evolving landscape of information technology.

Chemical Biology & Therapeutics

- Chemical Biology
- Structural Biology



From left to right: **Ng Guan Zhi, David Quach, Ng Hui Qi, Lim Wan Hsin, Nithya Baburajendran, Joel Wong, Jothi Anantharajan, Kang CongBao, Huang Qiwei, Wang Gang, Kimberly Lim**

Absent from group photo:
Mouli Chakraborty, Loh Yong Yao

Chemical Biology

Chemical Biology is a multidisciplinary team of chemists, biologists, and structural biologists who work in synergy to identify downstream substrates for a target of interest, decipher mechanism of action of hetero-bifunctional molecules and design innovative tools and strategies to enhance the drug discovery workflow at EDDC. The team helps to elucidate a more comprehensive view of the pathway impacted by a drug candidate, understand target-ligand interactions and develop various therapeutic modalities for unmet medical needs.

Structural Biology

Structural Biology employs state-of-the-art techniques to map the three-dimensional structures of proteins, DNA/RNA and their complexes with drug candidates to catalyse the drug discovery process. In so doing, the team provides a foundation for rational drug design, lead optimisation, and innovative therapeutic interventions. The team works closely with medicinal chemists, computational chemists, and biologists through fragment screening initiatives, biophysical characterisation of target-ligand interactions, and determining structures of macromolecules and complexes using an array of methodologies, such as X-ray crystallography, NMR spectroscopy, Cryo-EM, and other cutting-edge methods.

Translational Sciences

- In vivo Pharmacology
- Biomarker Development

From left to right: **Vithya Manoharan, Susmitha Vuddagiri, Vishal Pendharkar, Vikas Madan, Frances Kusuma, Hannes Hentze, Sylvia Gan, Nurul Nazihah Rozaini, Claudia Koh, Alison Tan**

In Vivo Pharmacology

The In Vivo Pharmacology (IVP) team enables advancement of projects from discovery to the IND (Investigational New Drug) submission stage by providing critical scientific and technical expertise. The IVP team executes high-quality in-house studies and facilitates study outsourcing to CROs. IVP team members specialise in designing and performing robust efficacy studies in oncology and immuno-oncology, fibrosis, and infectious diseases.

The team facilitates the assessment of drug metabolism, pharmacokinetic properties, tolerability and pharmacology of lead molecules. Once a molecule is selected for development, IND-enabling activities are conducted before regulatory submissions and approval for clinical trials. The work is supported by a state-of-the-art animal vivarium at Biopolis and designated laboratory software platforms for data acquisition and analysis.

Biomarker Development

The Biomarker (BM) Development team is responsible for the development of biomarker assays to enable project transition from discovery to PDC, and then into clinical trials. They drive the biomarker strategies for EDDC's precision medicines from program inception and translate them for use in First-in-Human studies and beyond. Prior to clinical development, the team establishes robust pharmacodynamic (PD) biomarker assays and, if required, performs development tests for suitable patient selection biomarker assays, to enhance the chances for clinical success and differentiation. Patient selection biomarkers are chosen in alignment with clinical development objectives, validated, then clinically implemented using a network of external partners operating under CAP/CLIA accreditation.

CAP: College of American Pathologists | CLIA: Clinical Laboratory Improvement Amendments | CRO: Contract Research Organisation | PDC: Preclinical Development Candidate | IND: Investigational New Drug

Project Management

From left to right: **Tan Bee Huat, Nur Huda, Rachel Lim. Kunal Shah, Phuong Lan Le Ngoc, Tiffany Scully, Xu Haoying**

Project Management

The Project Management team works hand in hand with senior management and scientific teams to manage portfolio projects, platforms and the triage workflow. The team oversees EDDC's entire portfolio of projects and platforms in collaboration with the leadership team and ensures that individual projects/platforms proceed within the agreed scope, timeline and budget. Beyond this, the team plays a crucial role in coordinating various key activities such as resource tracking, publication submission, technology disclosure submission as well as grant submission and tracking. To support the commercialisation efforts led by the Business Development team, the Project Management team takes the lead in assembling project documents and budgets.

The team members have multi-disciplinary backgrounds and extensive public and private sector experiences, enabling them to contribute to organisational success.

Development

- Medical
- Clinical Operations
- Chemistry, Manufacturing and Controls
- Regulatory Affairs

From left to right: **Stephanie Blanchard, Inderjeet Singh, Ranjani Nellore, Kunal Shah, Julienne Cometa, Venkateshan Srirangam, Lee Yock Ann**

Medical

The Medical team operates under two main functional areas:

1. Designing and executing (including safety lead and sponsor medical oversight of ongoing clinical trials) clinical development plans for EDDC assets that progress to the clinical stage
2. Guiding the discovery teams to make decisions at various stages of a project

Clinical Operations

The Clinical Operations team manages all development activities from study start up to close out, including vendor selection and CRO oversight, ensuring the study is conducted in accordance with scientific and ethical guidelines.

Chemistry, Manufacturing & Controls

The Chemistry, Manufacturing & Controls (CMC) team screens, selects, and manages qualified CDMO/CMOs for product development and cGMP contract manufacturing for drug substances (DS) and drug products (DP) in compliance with applicable regulatory requirements. Investigational products used in clinical trials include small molecules and biologics such as mAb, ADC, vaccines, and recombinant proteins. The team also provides information for the CMC dossier in regulatory filings.

Regulatory Affairs

The Regulatory Affairs team works closely with Singapore's Health Sciences Authority (HSA) and the U.S. Food and Drug Administration (FDA) to coordinate regulatory efforts around clinical trials that EDDC is supporting. The team also works closely with scientific colleagues to offer regulatory consultations on CTA/IND submissions, development planning and other regulatory submissions.

ADC : Antibody-Drug Conjugate | CRO: Contract Research Organisation | CDMO: Contract Development and Manufacturing Organisation | CMO: Contract Manufacturing Organisation | CTA: Clinical Trial Authorisation | cGMP: Current Good Manufacturing Practice | mAb: Monoclonal antibody | IND: Investigational New Drug

Business Development

- Business Development
- Alliance Management
- Communications

Strategy Planning

From left to right: **Chia Hsin-Ee, Rachel Lim, Elizabeth Ng, Low Choon Bing, Wang Yang, Ang Hwee Ching, Annie Tan, Tam Lay Hong, Goh Kay Lin, Tiffany Scully, Bernadette Chua**

The **Business Development** and **Alliance Management** team drives the commercialisation of EDDC's portfolio assets and manages partnerships with local and international public and private organisations. As EDDC is a national platform hosted administratively by A*STAR, the team works closely with colleagues in A*STAR's Innovation & Enterprise and Legal departments to achieve our goals.

Business Development

The Business Development (BD) team spearheads EDDC's engagement with pharma and biotech companies, as well as venture capital and venture builders, to commercialise EDDC's portfolio assets. The team monitors the competitive landscape for EDDC's portfolio projects and also works closely with our innovative platforms to support the development of strategic development plans towards licensing or spin-offs.

Alliance Management

The Alliance Management (AM) team drives EDDC's engagement and support for public sector researchers, mainly through the Target Translation Consortium (TTC) and the Singapore Therapeutics Development Review (STDR). AM also manages EDDC's collaborations with and outreach to publicly funded researchers as well as global alliance partners.

Communications

The Communications (DigiComms) team is responsible for maintaining EDDC's online presence and its brand assets. The team communicates EDDC's achievements, partnerships, expertise and capabilities through multiple channels including press releases, annual reports, and web-based written and visual content. DigiComms also supports EDDC's outreach efforts to the community through events and staff speaking engagements on various platforms.

From left to right: **Yu Lan, Bernadette Chua, Klement Foo, Teo Hsiang Ling, Sharleen Cheng**

Strategy Planning

The Strategy Planning (SP) team works closely with EDDC's leadership and across all functions to

- Establish EDDC's strategic goals and priorities on a 5-year (per Research Innovation & Enterprise cycle) and annual basis;
- Align the organisation to develop and implement workplans according to these agreed goals and priorities;
- Track the progress of the organisation towards achieving these outcomes.

The team is responsible for stakeholder management through:

- Organising regular meetings with EDDC's Governing Board and other key stakeholders to jointly review EDDC's performance and to seek endorsement for new initiatives or strategic milestones.
- Annual reporting of EDDC's progress to its stakeholders.

Operations

- Admin Operations
- Laboratory Operations
- Information Technology
- Quality Assurance
- Resource Management

From left to right: **Dai Mingyan, Chan Wai Ling, Alastair Lau, Yu Lan, Samantha Lee, Connie Er, Selina Chan, Helen Yeo, Cecilia Leong, Ho Soo Yei, Sharon Tay, Dakshani Selvakumar, Tan Shan Ho, Poh Zhiying, Sebastian Tan, Valerie Tay, Leyon Wong**

Absent from group photo:
Debbie Soh, Nur Huda

Admin Ops, Lab Ops and IT teams

These teams are responsible for ensuring that EDDC's day-to-day operations run smoothly and stably, enabling our research and business operations to progress productively.

Quality Assurance

The Quality Assurance (QA) team manages EDDC's Quality Management System and supports training and audits. In addition, QA also provides input to Good Clinical Practices related activities to ensure regulatory compliance.

Resource Management

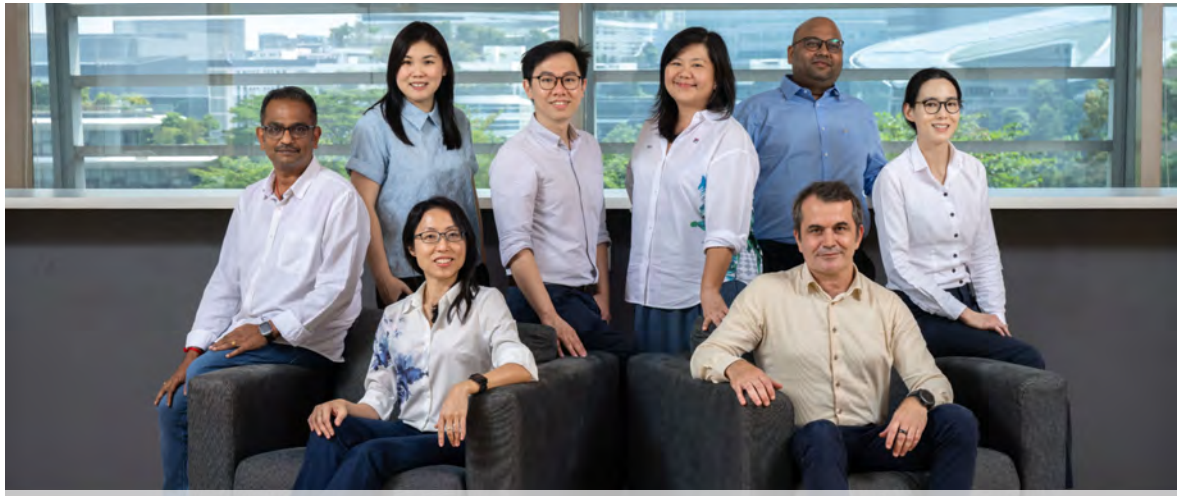
The Resource Management team is part of the Chief of Staff office. It manages EDDC's resource allocation in the areas of budget, portfolio, and personnel. The team prepares budget forecasts and tri-annual financial reporting to the Governing Board, and also obtains annual budget approvals.

Additionally, colleagues in the team organise organisation-wide events to promote communication between staff and management, working towards building a highly inclusive culture.

07

Our Initiatives

EDDC initiated the Target Translation Consortium and the EDDC Academic Research Organisation in 2019 and 2020 respectively to support drug discovery within the local community



From left to right: (Back row) **Giri Periyasamy, Annie Tan, See Yiyang, Carol Koh, Vishal Pendharkar, Tiffany Scully (Front row) Chia Hsin-Ee, Christophe Bodenreider**

Absent from group photo:
Chng Song Hui

EDDC is the main coordinator of the TTC. In addition, our scientists review and provide detailed, actionable feedback to all TTC applicants. Our scientists also serve as "Drug Discovery Specialists" to awarded projects, helping to design workplans aligned with industry standards and acting as a bridge to the wider ecosystem.

Established in June 2019, the TTC facilitates the preclinical validation of putative drug targets arising from publicly-funded research.

The TTC's funding programme was integrated into the **Singapore Therapeutics Development Review (STDR)** scheme from FY2021, as the **STDR's "Pre-Pilot Stream 1"**. This streamlined the funding pathways and ensures continued support for promising drug discovery projects in Singapore.

Successful TTC projects can go through an accelerated review process for STDR "Pilot" funding.

STDR
Singapore Therapeutics Development Review

Key Developments

9 TTC (STDR Pre-Pilot Stream 1) projects awarded from STDR Pre-Pilot 2022 call

9 EDDC scientists were appointed as Drug Discovery Specialists to support investigators

STDR Pre-Pilot 2023 grant call opened from Sep - Oct 2023

Organised a Single Asset Workshop for **17** STDR Pre-Pilot and Pilot teams

The TTC coordinating team & EDDC staff engaged the community by providing pre-submission consultations and developing a workshop for 17 project teams. We also participated in STDR roadshows.

From left to right: ***Matan Thangavelu, Linna Lyu, Giri Periyasamy, Chang Hong Yun, Goh Kay Lin, Gian Yi Lin, Teo Hsiang Ling, Justina Fulwood, Cheryl Tan, Jackie Ang, Doris Tee, Riazul Raziq, Shivaji Rikka***

Absent from group photo:
Wong Mei Yee, Connie Choong

High-Throughput Screening

EDDC's High-Throughput Screening (HTS) platform features an advanced storage system housing nearly half a million structurally diverse compounds, coupled with a complete automated setup capable of handling large-scale drug screening projects. The goal is to measure the effect of thousands of compounds on diverse biological systems through a range of biochemical, biophysical, and cell-based assays. This process enables the rapid identification of chemical hits, making it a potent tool in drug discovery and development.

High-Throughput Phenomics

The High-Throughput Phenomics (HTP) platform specialises in High-Content Screening (HCS), combining automated imaging and quantitative data analysis in a high-throughput format. This makes it well-suited for large-scale applications such as drug discovery and systems biology, where high-throughput image phenotyping is essential. The platform's advanced capabilities offer researchers a powerful and reliable tool to accelerate their scientific research and gain new insights into the investigation of biological systems.

Business Operations

The Business Operations team plays a crucial role within EARO, providing exceptional service to clients. The team ensures all processes are in accordance with international quality standards and legal requirements, creating a seamless and consistent experience for users.

30 **Research Entities Supported**
(up from 28 in 2022)

19 Public Sector **11** Private Sector

100% **Quality Objectives Met**
For ISO 9001 Surveillance Audit

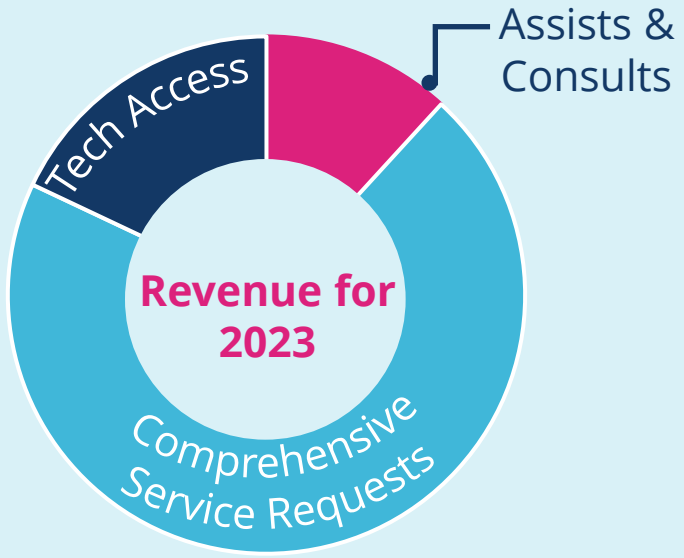
1 **Research Collaboration Agreement with an MNC**

13 **HT Screening Campaigns**
(up from 9 in 2022)

7 EDDC Pipeline Projects
(Portfolio + Early Ideas)

6 External Projects

69 **Service Agreements (up from 55 in 2022)**



8 **In-house Function Groups**

Engaged for external service projects

7 **Internal Projects Supported**

5 Pipeline Projects
(Portfolio + Early Ideas)

2 Grant-funded Projects

08

Looking Ahead

Strategic Shift to First-in-Class (FiC) Targets

In 2024, EDDC intends to focus on identifying and developing therapeutic assets for novel targets with causal human biology data supporting the target's role in disease. In particular, EDDC will be seeking novel targets in Oncology, Inflammation and Immunology through partnerships as well as in-house target discovery efforts. We will also continue to advance existing efforts in Ocular diseases.

Expanding AI and Automation Workflow Integration for Drug Discovery

In order to develop a foundation of quality data for machine learning-enabled drug discovery, EDDC will seek to broaden our access to and generation of proprietary data sets, including patient-derived data, as well as –omics data. We will also expand our data workflow optimisation effort to the small molecule discovery groups in EDDC.

In addition, we will also continue to invest in cutting-edge automation hardware and technology that will have disruptive organisational impact in improving productivity and efficiency.

Investing in the Next Frontiers of Drug Discovery

EDDC will continue to leverage its medicinal chemistry capabilities and synergies within Singapore's ecosystem of RNA biology researchers to accelerate the discovery of small molecules that target RNA. We will also grow our efforts in the development of small molecule degraders.

In the large molecule space, EDDC will be assessing technologies to address hard-to-drug surface targets, and also exploring the development of protein drugs that can replace or complement cell therapies.

Growing EDDC's Global Network of Industry and Alliance Partners

- EDDC will be reaching out on a concerted basis to pitch and raise the profiles of our portfolio projects, to accelerate project progress and boost success rates.
- We will be working with existing and new partners to identify opportunities for co-development of targets and/or assets.
- We will also be looking to nurture new networks to access technologies, like computational/AI approaches and automation, through win-win partnerships.

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