EFFICA BIOLABS

consult · test · deliver

St Vincent's Institute of Medical Research

Preclinical service

What we do

Effica Biolabs is a contract research organisation offering bespoke preclinical services. We test the therapeutic potential of drugs, cells and devices for a range of immune-related diseases to help establish the smoothest path to clinic.

We work with our clients to develop and implement testing approaches that integrate animal disease models and human tissue assays. We can apply our models and standardised assays for human peripheral blood analysis, pharmacodynamics and pharmacokinetics.

Who we are

Our leadership and advisory teams are trusted, world-renowned experts in a range of fields, with combined expertise in immunology, endocrinology, animal models of diabetes and genomics. We have a proven track record in clinical translation, which encompasses onsite human islet isolation and transplantation, biobanking and clinical trials.

Leadership Team	Expert Team
Helen Thomas PhD Scientific Director	Tom Kay MD, PhD
Tom Brodnicki PhD Operations & Project Manager	Stuart Mannering PhD
Christopher Meoli, PhD Commercialisation Lead	Tom Loudovaris PhD
	Michaela Waibel PhD
	Jarrod Skinner BSc (Hons)

Talk to us about your project

To find out more about what we can bring to your project, please contact Professor Helen Thomas or Dr Tom Brodnicki
Email: efficabiolabs@svi.edu.au
Phone: +61 3 9231 2480.
Online: Effica Biolabs

Our approach

Consult

We see ourselves as more than service providers. We are your partners - treating your projects as if they were our own. We work with you to design experiments that will deliver valuable insights and reach critical milestones on time and on budget.

Test

Our team has a depth of experience testing different types of therapeutics in animal models and human tissue. Our established suite of models, assays and data analysis expertise, in combination with state-of-the-art facilities and technology platforms, means we can offer both proof-of-concept and larger, more complex experiments to test your therapies.

Deliver

Through a collaborative, seamless process, we generate data to address your specific requirements. We provide reliable results that will help identify the best 'next step' for your project – whether that be scientific publication, clinical trials or regulatory submissions.

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Type 1 diabetes preclinical service

Capabilities

- Comprehensive range of preclinical in vitro and in vivo T1D models
- Outstanding experience in applying mouse models of T1D
- Human assays with cells from patients with T1D and normal controls
- Pharmacokinetics, pharmacodynamics, efficacy and immune-modulatory properties of drugs
- Flexible fee-for-service arrangements with project management support
- Additional services are available, and projects can be co-developed

Services

We offer validated T1D preclinical models to help you progress your candidate molecules, including:

Human islets

We isolate human islets from cadaveric organ donors in our on-site biological isolator facility. Testing includes:

- Islet cell viability assays
- Islet RNA expression signatures
- Viral transduction of islets
- Islet transplantation, including devices

Human T-cell assays

Our living biobank ensures access to human samples from T1D donors Testing includes:

- T cell proliferation, cell surface molecules, cytokine analysis
- T-cell responses and function

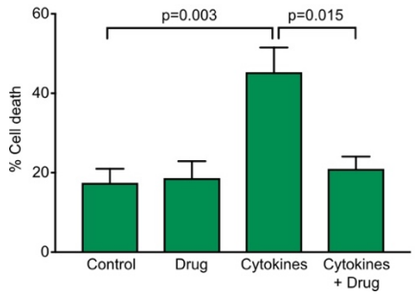
Murine models

Our portfolio of reproducible interventional studies in animal models is built on a foundation of careful mouse colony management and procedural expertise. Testing includes:

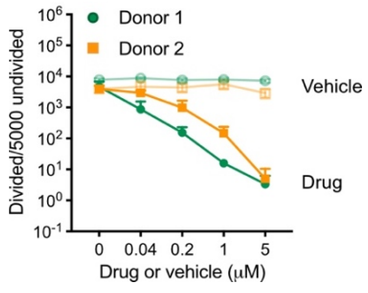
- Prevention of diabetes and insulitis in NOD mice and other T1D models
- Reversal of newly-diagnosed diabetes in NOD mice
- Immune cell phenotyping and function in islets and lymphoid organs
- Single cell transcriptomics, histology and imaging

We are a part of the Australasian Type 1 Diabetes Immunotherapy Collaborative (ATIC) which is a clinical trials network of adult and paediatric endocrinologists, immunologists, clinical triallists and members of the type 1 diabetes community.

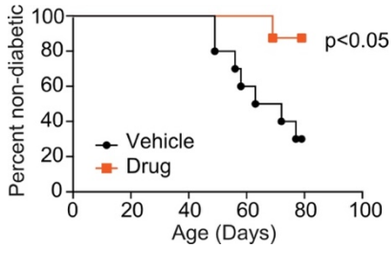
Established assays



Cytokine-induced islet cell death determined by flow cytometry



Human memory CD4+ T cell responses measured by CFSE dilution



Reversal of newly diagnosed diabetes in NOD mice

Publications

Trivedi PM, et al. Diabetes 66:1650-60 (2017) doi: 10.2337/db16-1250.

Ge T, et al. Clin Transl Immunol, 11:e1425 (2022) doi: 10.1002/cti2.1425.

Selck C, et al. Proc Natl Acad Sci USA 121:e2315419121 (2024) doi: 10.1073/pnas.2315419121

So M, et al. Proc Natl Acad Sci USA 115:10732- 37 (2018) doi: 10.1073/pnas.1809208115.