

## Preclinical service

### What we do

Effica Biolabs is a contract research organisation offering bespoke preclinical services. We test the therapeutic potential of drugs 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 animal 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
<p><b>Helen Thomas PhD</b> Scientific Director</p> <p><b>Tom Brodnicki PhD</b> Operations &amp; Project Manager</p>	<p><b>Tom Kay MD, PhD</b></p> <p><b>Stuart Mannering PhD</b></p> <p><b>Tom Loudovaris PhD</b></p> <p><b>Michaela Waibel PhD</b></p>

### 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** by email [efficabiolabs@svi.edu.au](mailto:efficabiolabs@svi.edu.au) or phone **+61 3 9231 2480**. 9 Princes Street Fitzroy Victoria 3065 Australia [efficabiolabs.com](http://efficabiolabs.com)

### 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.

## 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 islet assays and immune cells from patients with T1D and normal controls
- Preclinical testing of pharmacokinetics, pharmacodynamics, efficacy and immune-modulatory properties of drugs, including histology and FACS
- 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 testing to help you progress your candidate molecules (small molecules or biologicals), 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

#### Human T-cell assays

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

- CD8+ CTL activity
- CD4+ T-cell responses

#### 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:

- Reduction of insulinitis in NOD mice
- Prevention of diabetes in NOD mice
- Reversal of newly-diagnosed diabetes in NOD mice
- Accelerated and induced mouse models of T1D
- Immune cell phenotyping and function in islets and lymphoid organs

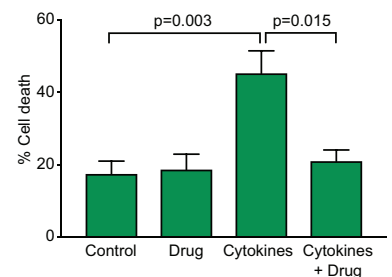
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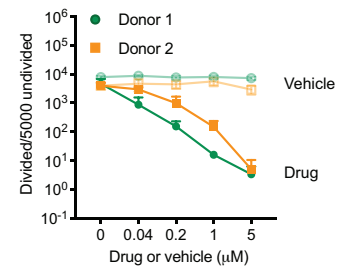
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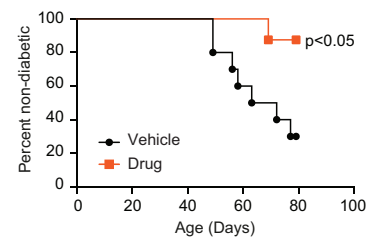
### Established assays



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. *Front Immunol.* 11:588543 (2020) doi: 10.3389/fimmu.2020.588543.

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

Akazawa S, et al. *Diabetologia*, 64:878-889 (2021) doi: 10.1007/s00125-020-05378-z.