



AGDS:Cell-omics - UPDATE & INSIGHTS



Why This Study Matters

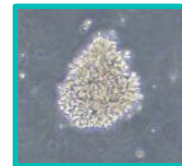
"Major depressive disorder (MDD) presents differently across individuals, with substantial variation in symptoms, underlying mechanisms, and treatment response, making outcomes difficult to predict. Current antidepressant prescribing often involves trial-and-error, with considerable variation in response and recovery"

What is AGDS:Cell-omics?

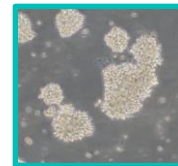
AGDS:Cell-omics is a next-generation research resource built from the original Australian Genetics of Depression Study (AGDS).

The AGDS:Cell-omics initiative aims to:

- ✓ Link clinical, medication, genetic, and cellular data
- ✓ Look at individual responses to medication using cell line models
- ✓ Enable precision psychiatry approaches in the future



Images of cultured cells generated from participant blood samples



Original AGDS Cohort (2015-2018)

- 22,263 participants with self-reported lifetime depression
- Extensive data collection via 445-question survey
- Linked with prescription data (PBS) over 4.5 years

AGDS_Cello Cohort (2023-2025)

- Selected participants based on antidepressant treatment patterns using the PBS data
- 770 participants currently enrolled and consented
- Blood samples collected to enable cell-based assays
- Development of participant cell lines to study individual responses to medication

Thank you.....

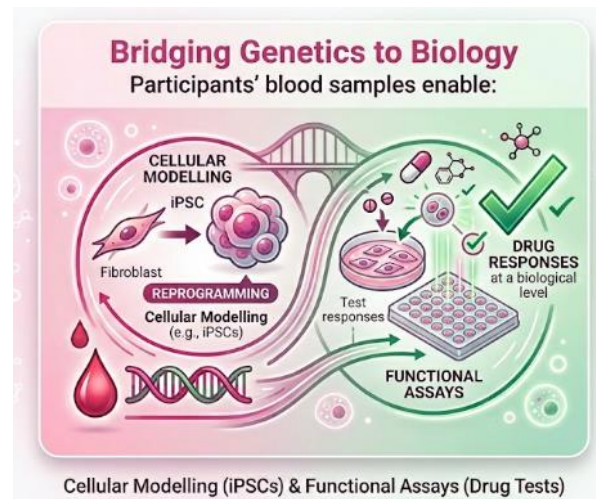


For your participation in the AGDS-Cello project. We value the time and contribution you and many others have made to partner with us in trying to improve the lives of people living with depression.

If you have any questions or concerns about your participation in this study, please do contact us.

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Our collaborators:



A New Way to Understand Depression

Instead of just looking at symptoms, we group participants by how they actually use antidepressants in real life. By tracking these real treatment journeys, we get a much clearer, truer picture of how uniquely depression affects different people.

Key Insights...So Far

We generated genetic risk predictors for each individual for 5 mental illness related traits.

We find

- 1) strong differences between those with depression compared to those without
- 2) For people with depression we find no differences between those who take SSRIs vs those who take SNRIs to successfully treat depression
- 3) People with difficult-to-treat depression show higher risk scores than those who respond to SSRIs/SNRIs

Future Directions...

Our plan is to introduce other components to this project to add to the resource and data we are building to progress our goal of personalised mental health care.

Over the next 2 years we will be:

1. Asking participants to provide a stool sample – to understand the impact of the gut microbiome in people’s response to antidepressant medication.

Expect to hear from the team soon



Launching July 2026

2. Recruiting individuals who do not have a depression diagnosis – they will act as controls for the cell-based assays we are undertaking. Know someone who may be interested in being involved?

Direct them to our website for more information

<https://auscello.org/>

3. Conducting a follow-up project to understanding the range and severity of symptoms experienced when people with a Bipolar diagnosis transition to and from depressive episodes.

Read our latest publication on the AGDS:

Cell-omics project

<https://www.medrxiv.org/content/10.1101/2025.09.16.25335873v2>



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

AGDS:Cell-omics is among the first initiatives globally to integrate four streams of health data:

✓ Clinical Symptom Data

✓ Prescription Trajectories

✓ Genome-Wide Genetic Data

✓ Cell-Based Functional Biology

This multimodal design allows researchers to move beyond “what works” to understanding “why it works for some people but not others.”

