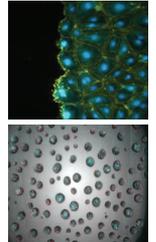


THE VCFG INSIDER

Enabling discovery and driving translational medicine with high throughput technologies

Welcome to our first newsletter, full of hope that we are now moving towards everyone being back on site and operating a full house. This newsletter will be produced quarterly and will keep everyone up to date on the team, technology advances, new instruments, new ideas and meetings of interest. We hope it stimulates you to become part of the broad VCFG community. We have just celebrated 13 years of working with researchers across the country. If you don't know us, meet our team and check us out [here](#).



What's happening?

- Our **Cytation C10** Confocal Imaging Reader is up and running. The C10 is our second imaging plate reader, complementing the Cytation 5 and the Cytation 3 (on Level 12), and importantly adds a high throughput spinning disc confocal to our suite of imaging options.
- Our Cytation 5 now has a **BioSpa Live Cell Analysis System** attached, which can automate imaging of up to 8 plates, increasing our capacity to image night and day. We expect our primary use will be for long term 3D characterisation and screening projects.
- We have arranged access to **Jess**, a high throughput western blotting system, housed in Anatomy at UniMelb, chat with us to learn more.
- Screening has commenced using our **whole human genome CRISPR sgRNA library** and we have developed automated workflows for high throughput nucleofection delivery.
- Matrigel has been incredibly difficult to source at a global level, and we are happy to have secured a large number of bottles at 10mg/ml concentration (phenol red free). Like other reagents we house, this can be purchased via iLAB. Speak with us first to ensure we have the amount you need on site.

Upcoming Workshops and Conferences

- NCATS Assay Guidance Workshop for Cell Based Assays was held on November 17 and 18. The talks are available online alongside the **Assay Guidance Manual**, this is an excellent resource for high throughput imaging and analysis.
- Merck/Abacus will present their **Luminex** suite of instruments and applications sometime in February 2022, date TBA.
- **Lorne Genome** and **Lorne Cancer** - registration closes soon - lots of researchers using our platform will be presenting.
- Heading to Lorne? Please make sure you update your PRIME portal if presenting.
- **Society of Biomolecular Imaging and Informatics (SBI²)** is another great resource for high content imaging. You can join the SBI² and access all it's material online [here](#).

Technology

In February 2022, the VCFG will be installing **Trend Bio's Isoplexis** Isolight instrument for a 6-month evaluation. Isoplexis Technology has 3 core applications:

- **Functional Immune Landscaping.** Determine the polyfunctionality (ability to detect more than 2 cytokines being secreted by the same cell) of single immune cells by examining the adaptive or innate immune secretome (analysing up to 32 cytokines in the same cell and sample simultaneously) in human and mouse T cells, CAR T cells and NK cells.
- **Intracellular Signalling Omics.** Measure up to 20 intracellular phosphoproteins or metabolites in single cells to identify tumour signalling pathways associated with drug resistance or metastasis.
- **High-Plex Walk-Away Immunoassays.** Utilise this automated multiplexed ELISA platform that only requires sample loading from the researcher and targets up to 30 cytokines per sample and runs up to 64 samples at a time. This platform uses as little as 11 µl of the sample that can be either cell culture supernatant, plasma serum, CSF or urine.



You can watch a video for the Isolight system and Single Cell Proteomics [here](#), and Codeplex (multiplexed ELISA) [here](#). Please contact us for the recording of the seminar held at Peter Mac.

PRIME - our project portal

The VCFG is powered by PRIME (PProject Information and Management Enterprise), Atlassian's Confluence tool that brings together all the details about your project, from the grant concept, assay development, screen and analysis. All the metadata is linked, your analysis is fully downloadable and interactive, all code is provided and easy to navigate. This portal future-proofs all your screening projects. Contact us if you want to look at our demo site.

Grants

- We congratulate our collaborators who were successful in the recent NHMRC ideas round.
- **TIA** Pipeline Accelerator voucher scheme applications have just closed. Plan now for 2022, submission dates expected to be March and October.
- Thinking of including an aim using the VCFG in your next grant, please connect with Kaylene to start discussions and perhaps generate some preliminary data in early 2022.

Publication highlight

In each edition we will highlight a paper. Choo, Ramm *et al.*, is our first paper outlining our 3D characterisation and screening pipeline, developed in collaboration with the Risbridger team from Monash University. This paper describes the tools we've developed to embed prostate cells in matrigel in 384-well format using our Janus robot, followed by label-free daily brightfield imaging protocols to quantify structure size and dynamics over the duration of the assay and concluding with fluorescence end-point staining in parallel with Cell Titer Glo whole-well viability. This paper shows that drug screening in combination with imaging is an incredibly powerful way to monitor heterogeneity and cellular response. To read more, click on the title below.

High-throughput imaging assay for drug screening of 3D prostate cancer organoids. SLAS Discovery special SBI2 issue. Vol 26, Issue 9, June 2021. Nicholas Choo, Susanne Ramm, Jennii Luu, Jean M Winter, Luke A Selth, Amy R Dwyer, MURAL Investigators, Mark Frydenberg, Jeremy Grummet, Shahneen Sandhu, Theresa E Hickey, Wayne D Tilley, Renea A. Taylor, Gail P. Risbridger, Mitchell G. Lawrence, Kaylene J Simpson.

Check out the papers published this year [here](#).

Housekeeping

- VCFG will be closed from Dec 24, 2021 to Jan 10, 2022. Researchers who are trained and proficient can access the lab but will need to discuss with the team before we close.
- The global shortage on hard plastics has hit us hard. We are now housing both Corning and Perkin Elmer 384-well plates, we'll discuss with you when you start your project which to use.
- Compounds Australia last orders by the end of November. We can continue ordering in December for delivery beyond mid-January.
- Our RPPA platform has been decommissioned, with the instrument succumbing to age just as we'd hit our planned shutdown. Researchers can still access our antibody collection so shout out if you want to try something. Otherwise, we suggest thinking about Mass Spec options, speak to Nick Williams (nawill@unimelb.edu.au) at **MSPF**.

