VCB Annual Key Achievements

July 2021 – June 2022

The Victorian Cancer Biobank continues to facilitate research and innovation with the support of the Victorian Community, despite another difficult year due to the pandemic.

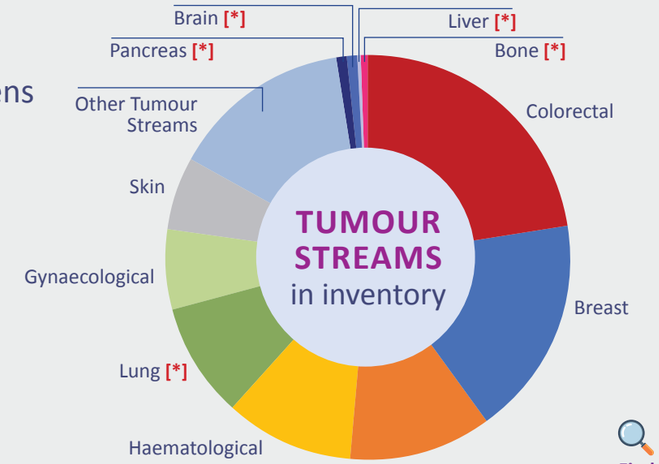
Biobanking activity

859 **PARTICIPANTS** donated biospecimens to the VCB

450,000+ **SPECIMENS** in inventory

5,989 **SPECIMENS RELEASED**

2191 **CLINICAL DATA** sets released



Find out more about our available tumour streams

[*] Low survival cancers
Low survival cancers as defined by Victorian Cancer Registry, and a focus target for the Victorian Department of Health

Cancer research projects supported

2 International

6 Interstate

69 Victorian

Clinical trial support

40 **CLINICAL TRIAL** projects serviced

5,923 **SPECIMENS SERVICED**

26,610 **SPECIMENS** are professionally managed for ongoing clinical trials

Contributions and achievements

1 **COMMERCIALIZATION OF AUSTRALIAN INNOVATION** for diagnostic technology developed with the support of VCB specimens

$13 MILLION new funding acquired by our clients

15 **SCIENTIFIC PUBLICATIONS**

MELBOURNE AWARDS 2021 Finalist

HOSTED NATIONAL BIOBANKING FORUMS

- Professionalism and Career Prospects
- The National Biobanking Strategy

About Victorian Cancer Biobank

The Victorian Cancer Biobank (VCB) consortium is a collaborative tissue bank network operating since 2006. The VCB is a nexus for researchers to access human biospecimens and data under a trusted ethical and legal framework, and has been acknowledged in the Victorian Cancer Plan 2020-2024 as critical infrastructure for addressing cancer challenges in Victoria.

Acknowledgement

Victorian Cancer Biobank, a collaborative research infrastructure, is supported by Victorian Government through the Victorian Cancer Agency, a business unit of the Department of Health.

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Case Studies

Basic Science research to discover potential cancer biomarker

Jeremy Drake

A new protein involved in breast cancer has been revealed by Dr Jeremy Drake (Victoria University) and a group of Australian and international collaborators. The study was supported by the VCB, which contributed a Victorian cohort of breast cancer samples. Early Growth Response 4 (EGR4) has been shown to play an important role in the proliferation of small cell lung cancer, however the roles of EGR4 in breast cancer remain unclear. In this study, Dr Drake and colleagues have found that a short form of the EGR4 protein, EGR4-S, is expressed in breast cancer cells. EGR4-S expression levels indicated a proliferative state and could be reduced through targeted therapy. However, a reduction of EGR4-S induced by cellular stress, has resulted in an increased metastatic tendency of the cancer. These findings indicate the potential prognostic value of the marker for cancer which is currently under further investigations.

The VCB has supplied ethically sourced specimens from 30 breast cancer patients to study the expression of the biomarkers, including snap frozen tissues for western blot and PCR, as well as tissue microarray (TMA) for high throughput immunohistochemical assessment.

To read more about these findings click here.

Novel self-test for cancer monitoring – Tn Antigen 'blood prick' test

Universal Biosensor

'The Remission Monitoring hand held device and test strip will look similar to this Xprecia Prime™ product which Universal Biosensors sells across Europe'

The Victorian Cancer Biobank (VCB) is supporting another ground-breaking innovation in Victoria for easy point-of-care monitoring of cancer reoccurrence. Universal Biosensors, a Victorian based company, has obtained biospecimens from VCB for their international development clinical study. Their study aims to develop a handheld portable cancer biosensor for T and Tn Antigen using a "finger prick" blood test for measuring patient cancer remission and reoccurrence. It is estimated that 78 million people globally are currently in cancer remission, and the Cancer Biomarker biosensor test could potentially revolutionise cancer monitoring which is currently only available through clinic or hospital-based imaging and blood tests. Ultimately, this technology advancement may one day allow us to manage cancer reoccurrence as easily as monitoring blood sugar levels for diabetic patients.

The developmental stage study has assessed the performance of the test in a cohort of 346 patients across multiple cancer types, including colorectal, prostate and breast. The test is showing improved sensitivity and specificity when compared against common cancer biomarkers being used currently such as Carcinogenic Antigen (CEA) and prostate-specific antigen (PSA).

VCB has significantly contributed specimens to about a third of the cohort of this initial study and is expecting to contribute more towards further development of the test.

What do biomedical researchers want from Biobanks?

National Biobanking Survey

As one of the largest cancer biobanks in the country, the VCB is always committed to meeting the demands of our users and keen to learn about the needs of biobanking in cancer research innovation. As such, the VCB has collaborated with biobanks across Australia to conduct a national survey to gain perspectives from researchers on the demands of biobanks. Biobank users from VIC, NSW, Western Australia and South Australia have provided their opinions to this survey, and the summary of the survey outcomes was:

Positives:

- Products (e.g. blood or data) provided by biobanks are generally fit-for-purpose and of good quality
- Processes for accessing biobank products are reasonable

Areas for Improvement:

- Availability of specimen and/or clinical data can be a limiting factor for research progress, therefore more investment is needed to recruit or leverage more specimens and enrich datasets (e.g. follow up clinical data)
- Cost for obtaining products from biobanks are generally high and more subsidisation or financial support are demanded

The survey provides valuable real-world evidence to VCB, and stakeholders on understanding the current demands of biobanking. Such insights enable the improvements of our business practice and priorities in achieving sustainability to better facilitate biospecimen needs for critical research discoveries. To read more please click here.

Consortium Members:

Cancer Council Victoria · Austin Health · Eastern Health · The Royal Melbourne Hospital · Monash Health · Peter Mac Peter MacCallum Cancer Centre Victoria Australia

Supported by:

Victoria State Government Department of Health