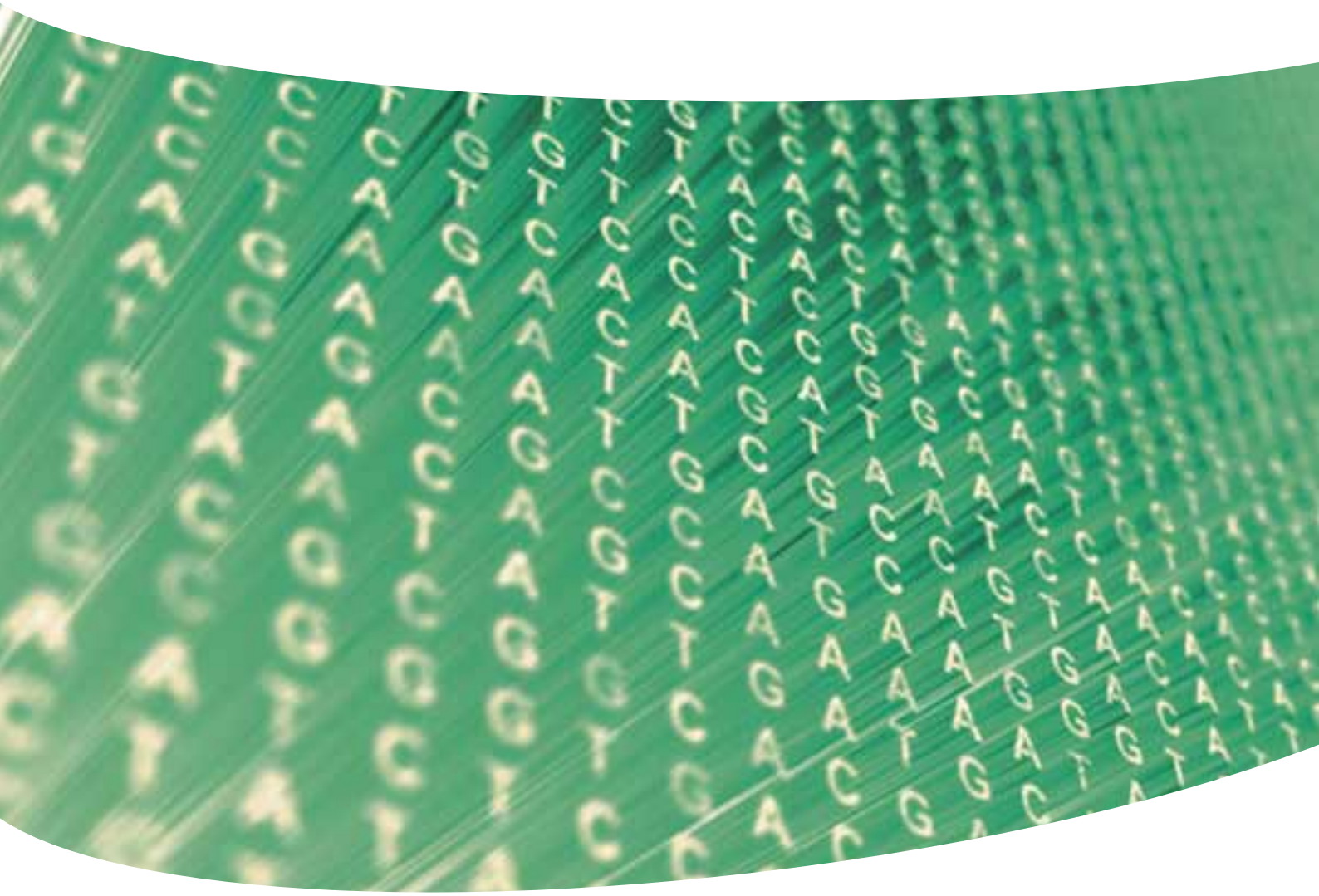
MHTP
Monash Health
Translation Precinct

Medical Genomics Facility

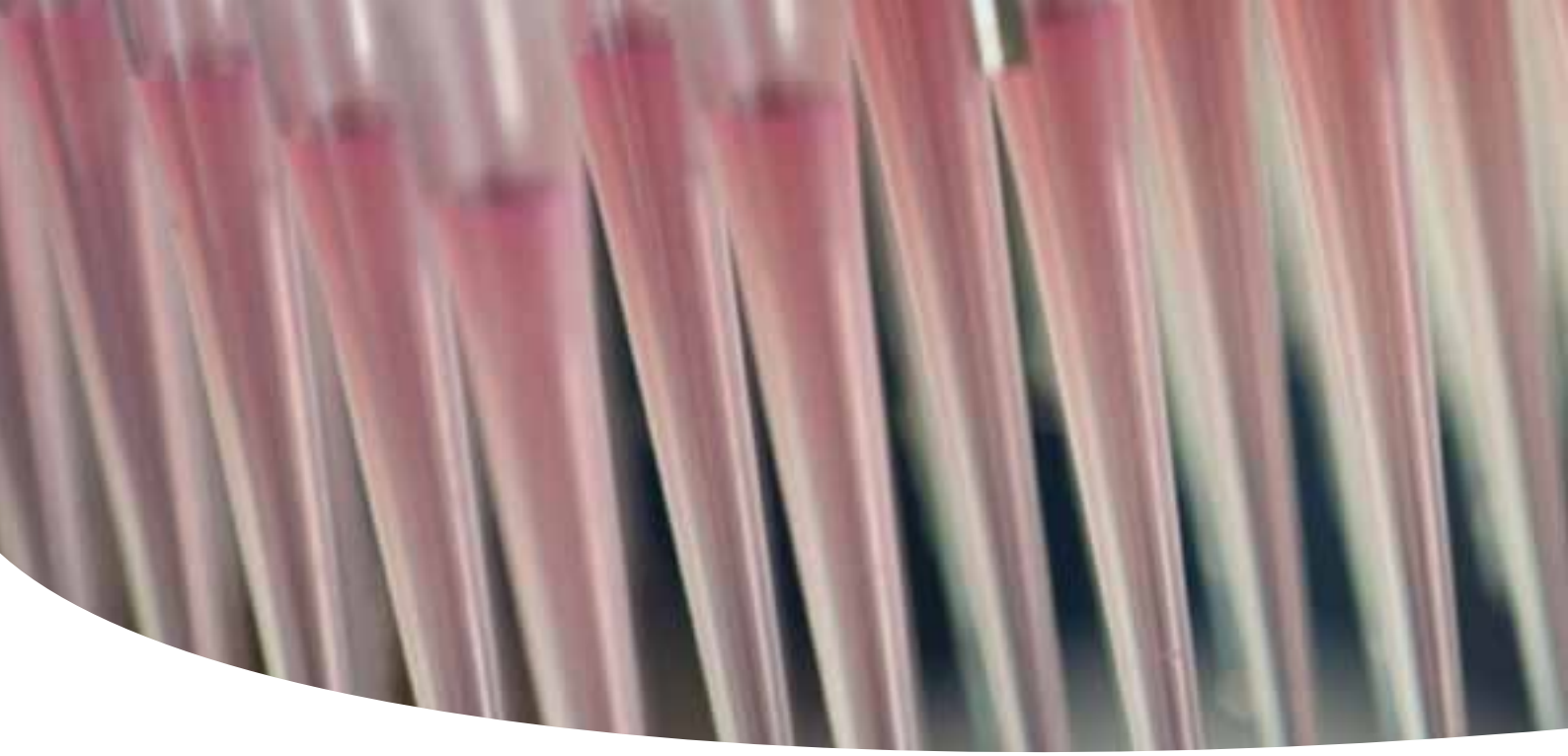
ACRF Centre for
Cancer Genomic Medicine



Services

- Next Generation Sequencing
- Agilent Bioanalyzer
- Covaris DNA Shearing

Australian
Cancer Research
Foundation



ACRF Centre for
Cancer Genomic Medicine

ACRF Centre for Cancer Genomic Medicine is one of the four centres forming the MHTP Medical Genomics Facility:

- The Gandel Charitable Trust Sequencing Centre
- ACRF Centre for Cancer Genomic Medicine
- MHTP High Content Screening Centre
- MHTP Microarray Centre

Located at the Monash Health Translation Precinct (MHTP) in Victoria, we are a not-for-profit facility using state-of-the-art technologies to service research Institutes throughout Australia. We maintain an excellent reputation for the provision of the highest quality genomic data and comprehensive client support.

The Centre operates a Next Generation Sequencing (NGS) service using the latest Illumina HiSeq 1500 and Life Technologies Ion PGM and Proton systems. Complementary services include RNA and DNA quantitation utilising the Agilent Bioanalyzer and DNA Shearing using the Covaris system.

The ACRF Centre for Cancer Genomic Medicine was established in 2011 through generous funding from the ACRF. The Centre aims to pioneer innovative research that will lead to significant outcomes in the prevention, diagnosis and treatment of cancer.

Australian Cancer Research Foundation

Contact Us

Email medicalgenomics@monash.edu
Web http://mhtpmedicalgenomics.org.au
Tel +61 3 9902 4790 or +61 3 9594 3576

Illumina HiSeq 1500

For whole genome, transcriptome, exome, small RNA, ChiP-Seq, Methylation, Copy Number Analysis and/or large numbers of samples, the Illumina Hiseq 1500 system provides a high throughput and flexible solution. The flexibility results from the ability to run experiments in eight independent lanes using high throughput sequencing chemistry or two lanes using rapid sequencing chemistry. This is coupled with multiplexing capability by use of Illumina barcodes that allows 96 samples to be run in a single lane.

Ion PROTON™

The Ion Proton™ System is a benchtop sequencing system that delivers exome and transcritpome sequencing in a few hours on the Ion PI™ Chip. The Ion Proton uses semiconductor technology and the simplest sequencing chemistry including natural nucleotides, no enzymatic cascade, no fluorescence, no chemiluminescence, no optics, no light. The system uses a high-density array of micro-machined wells that contain a ion-sensitive layer to detect the slight change in pH of the solution in each well as a hydrogen ion is released during each nucleotide incorporation during DNA synthesis.

Ion PGM™

For small genomes, targeted resequencing and library assessment or validation, the Ion Torrent is an ideal solution. Throughput is scalable through the use of different semiconductor chips that provides 10Mb to 1Gb of data and read lengths of 200bp to 400bp. Multiplexing can be achieved by the use of 96 Ion Torrent barcodes and researchers can interrogate targeted genomic regions through amplifying up to 1,536 amplicons in a single tube using AmpliSeq Panels.

Bioanalyzer RNA and DNA Quantitation

The Agilent 2100 Bioanalyzer system automatically performs the multiple steps of gel-based electrophoresis, replacing the need to run agarose gels to separate and quantitate RNA or DNA samples.

Using Caliper Life Sciences' LabChip technology, each chip contains a set of interconnected microchannels for nucleic acid separation. Internal standards are used to accurately size and quantitate RNA and DNA.

Resultant data is conveniently available as a report (pdf) containing a simulated gel image, electropherogram and tabulated results.

Covaris DNA Shearing

The Covaris is the only system that successfully and reproducibly shears DNA in the size range of 100 – 5000+ bp, eliminating the need for multiple shearing technologies. The process also maintains DNA integrity, as shearing is carried out under temperature – controlled conditions in a closed vessel that eliminates the risk of cross-contamination.

The Covaris technology enables controlled, quantitative and standardised sample preparation for various applications, including shearing DNA fragments for next generation sequencing library preparation.

Member of:

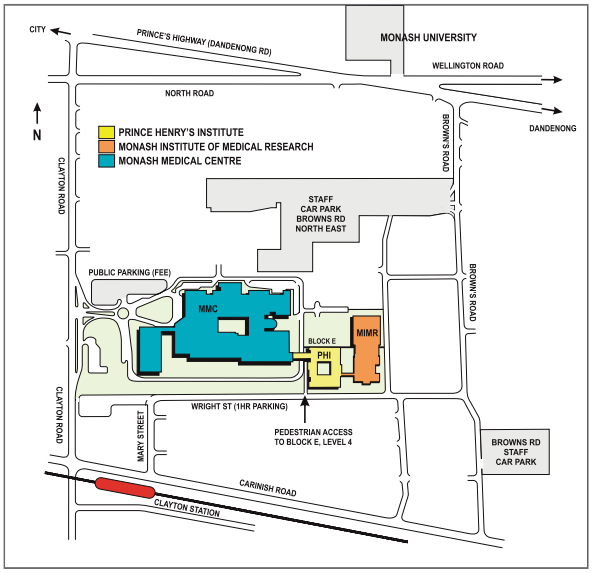
VPTN

AGTA

ACRF Centre for
Cancer Genomic Medicine

Monash Health Translation Precinct
c/o MIMR-PHI Institute of Medical Research
27-31 Wright Street
Clayton, VIC 3168 Australia
Tel +61 3 9902 4790
Tel +61 3 9594 3576
Fax +61 3 9594 7111

Website: http://mhtpmedicalgenomics.org.au
Email: medicalgenomics@monash.edu



Australian
Cancer Research
Foundation

MHTP is a partnership between:

MonashHealth Mi phi mimr-phi institute MONASH University