MASSEY UNIVERSITY
COLLEGE OF SCIENCES
TE WĀHANGA PŪTAIAO

MASSEY GENOME SERVICE
MARCH 2015 NEWSLETTER

Welcome to the March 2015 issue of the Massey Genome Service (MGS) Newsletter.

MANAGEMENT CHANGES

Lorraine Berry has resigned from the management position with the Massey Genome Service to pursue further study. She will be staying on in the management position half time until a replacement manager has been appointed. Richard Fong has picking up the other half time management position for the service.

Lorraine will continue with the scoping and contracting of client projects, and the delivery of data to clients for the NZGL Service and Richard will be taking over the daily operation and communication with clients from the delivery of samples to generating the data. Richard is now also in charge of the ABI Sequencing and Genotyping Service.

ILLUMINA MiSEQ NEXT GENERATION SEQUENCING

A reminder, all enquiries regarding Illumina MiSeq projects are to be directed to NZGL via their website enquiry at http://nzgenomics.co.nz. Please provide a detailed description of your project and experimental plan, so that NZGL genomics and bioinformatics personnel involved with scoping of projects are provided with a good description of your project requirements.

Please send enquiries regarding quotations to Jenny Shackelford, Project Manager, NZGL. Contact details are:

E-mail: jenny.shackelford@nzgenomics.co.nz

Phone: +64 3 470 3543

We have information on our website regarding the Illumina MiSeq service at http://genome.massey.ac.nz, under “Next Generation Sequencing Services”. The information includes:

- Process to follow for submission of work to our service
- Applications currently being provided
- Sample preparation, quantification and quality requirements
- Sample and library QC checks preformed by our service
- Sample delivery information
- Storage and retention of samples by the service
- Sequencing Run report delivered with the data upon completion of the work
- NZ Genomics Ltd Contact

NEW DEVELOPMENTS

Genotyping/Biospectra-by Sequencing (G/BBS)

NZGL is in the process of getting Genotyping/Biospectra-by Sequencing (G/BBS) set up as a service, with the Massey Genome Service providing library preparation and the Otago Genomics and Bioinformatics Facility providing the HiSeq sequencing. Bioinforamtics services will also be provided. We hope to be able to provide this service in the next 3-4 months.

NZGL and the MGS Illumina MiSeq Service offers the following Illumina MiSeq run options:

- Illumina MiSeq v3 (2 x 300 base PE) providing ~20-30 million reads (~12-15 Gb output)
- Illumina MiSeq v3 (2 x 75 base PE) providing ~20-30 million reads (~3-3.8 Gb output)
- Illumina MiSeq v2 (2 x 250 base PE) providing ~12-15 million reads (~6-7.5 Gb output)
- Illumina MiSeq v2 (2 x 150 base PE) providing ~12-15 million reads (~3-4.5 Gb output)
- Illumina MiSeq v2 (2 x 25 base PE) providing ~12-15 million reads (~600-750 Mb output), for small RNA projects only.
- Illumina MiSeq Micro v2 (2 x 150 base PE) providing ~ 4 million reads (~1.2 Gb output)#
- Illumina MiSeq Nano v2 (2 X 150 base) PE ~ 1 million reads (~ 0.3 Gb output)#
- Illumina MiSeq Nano v2 (2 X 250 base) PE ~ 1 million reads (~0.5 Gb output)#

NOTE: # These run options are ideal for small scale projects, containing a small numbers of bacterial genomes or PCR amplicons.

MGS is offering 16S rRNA amplicon sequencing, which targets the V3-V4 hyper-variable region of 16S. The libraries are prepared using a “Single Step PCR Approach”, using Illumina tailed primers, where up to 384 libraries can be multiplexed onto one Illumina MiSeq run. The run can either be an Illumina MiSeq 2X 250 base PE run; version 2 chemistry or an Illumina MiSeq 2X 300 base PE run; version 3 chemistry.

MGS will keep you informed of future developments with these services and we look forward to servicing your Next Generation Sequencing needs in the near future.

NZGL BIOINFORMATICS SERVICES

NZGL offers bioinformatics services for NGS work, which is provided through each of the three collaborators, Massey University, University of Otago and University of Auckland, and is charged at a hourly rate. If you want NZGL bioinformatics assistance please include this in your NZGL online enquiry.

NZGL Q&A Sessions: Talk to a Bioinformatician

The NZGL Massey Bioinformatics Team is still offering weekly Q&A Sessions where you can spend some time talking to one of the NZGL bioinformatics staff about your proposed project before you proceed with an NZGL enquiry. Locations and times are listed below.

Massey University - Palmerston North

Day of week: Friday
Time: 11am – 12pm (or by arrangement)
Location: Massey University, Turitea campus, Science Tower D rooms 5.30 and 5.31

Virtual location: Skype patrick.j.biggs or dave.wheeler75
Staff available: Dave Wheeler and Patrick Biggs
Other contact information: Dave Wheeler, +64-6-3569099 ext 84598

MOVE INTO NEW OFFICES

The Massey Genome in the next few weeks will be moving into new offices so that we can free up lab space and have an office space which is separated from the lab.

We will be moving into the two offices on the 3rd floor of Science Tower D, SC3.02 and SC3.03 next to the Dry Good Store (SC3.01).

We are all looking forward to having our own office!!

HAND DELIVERY OF SAMPLES TO MGS

A reminder, laboratories within the Institute of fundamental Science (IFS) are required to meet PC1/PC2 compliance to function as a "Containment Facility". In order to continue to meet compliance IFS has installed security doors throughout Science Towers C and D to restrict and control access to laboratories. A security door has been installed on level 3, right next to the Science Tower D lift, which restricts free access into the Massey Genome Service laboratory.

For all customers outside of IFS who require access to the Massey Genome Service laboratory to talk to our staff, FIRST go to the IFS admin office where you will be instructed to sign for a temporary access card. The access card needs to be returned to the IFS admin office before you leave the building.

Activation of the security doors will take effect as of the 27th May 2014. The IFS admin office located on the 4th floor of Science Tower B, room ScB4.11.

IFS admin office contacts are:

- Cynthia Cresswell: ext 84706
- Colleen Blair: ext 84612
- Ann Truter: ext 84703

Natisha Magan and Andy Trow will also be holding a supply of temporary access cards, which you can use:
Natisha Magan: location – ScB3.33, ext 84588
Andy Trow: location – ScA3.18, ext 84601

Please contact Natisha Magan or Andy Trow if you have any concerns.

If you are only delivering samples and you do not have to talk to any of the MGS staff, we now have a small fridge located just outside the security doors, on the 3rd floor of Science Tower D, across from the lift. You are welcome to put your samples into this fridge along with the sample submission form. The MGS laboratory staff collect the samples from the fridge at least twice a day.

BIOANALYSER SERVICE

MGS is still providing the "Bioanalyser Service" for the quality and quantification assessment of total RNA and mRNA only, using the Agilent RNA 6000 Nano Labchip. The service is no longer providing the Agilent RNA 6000 Pico Labchip due to the lack of demand.

The Agilent 2100 Bioanalyzer is a microfluidic-based electrophoresis platform for the quality and quantification analysis of RNA, DNA and protein. It is designed to deliver high quality digital data from very small amounts of sample. It is a very valuable tool for assessing the quality of your RNA samples before proceeding with expensive Next Generation sequencing, Microarray and Gene Expression experiments.

Please refer to the MGS website at http://genome.massey.ac.nz, under the section "Bioanalyzer Service" for information on the assays provided, pricing, sample requirements, and sample submission guidelines.

There are three Agilent RNA 6000 Nano Labchip Assays that the Massey genome Service provides:

- RNA 6000 Labchip Eukaryote Assay
- RNA 6000 Labchip Prokaryote Assay
- RNA 6000 Labchip Plant Assay

On the "Sample Submission Form" please make sure you select the most appropriate assay type for your samples.

The minimum number of samples per request is 6 samples. The cost per sample is $17.00 excl. G.S.T.

COURIER BAG SERVICE

MGS provides a free courier service for both our ABI sequencing and genotyping services. Prepaid courier bags can be mailed to New Zealand customers free of charge.

If you wish to use our free courier service, please send an email to Pani Vijayan (e-mail: p.vijayan@massey.ac.nz) stating the number of courier bags to be sent to you, your courier address, postal address and contact phone number.

Please send the samples to IFS Inwards Goods at the following address:
Massey Genome Service
Institute of Fundamental Sciences
Inward Goods
Science Tower A, Level 1,
Columbo Road, Massey University
Palmerston North 4410
New Zealand

NEXT ISSUE OF MGS NEWSLETTER

The next issue of the MGS Newsletter will be in June 2015. If you have any concerns and issues with sequencing and genotyping with the MGS please feel free to contact our friendly staff who will be happy to assist you with your concerns and provide you with helpful advice.