



MASSEY GENOME SERVICE NEWSLETTER



1st Row (L to R): Lin Xiao Xiao, Paul Dijkwel, Catherine Norman, Rubina Jibran, Mauro Truglio
2nd Row (L to R): Pani Vijayan, Richard Fong, Patrick Biggs, Dave Wheeler

NEW MANAGEMENT

Rubina Jibran has joined as the laboratory/QA manager for the Massey Genome (MGS) and New Zealand Genomics Limited (NZGL) services. **Rubina** will continue with the scoping and contracting of client projects, the daily operation communication with clients from the delivery of samples to generating the data, the delivery of sequencing data to clients for the NZGL service, and is in charge of the ABI Sequencing and Genotyping Service. **Richard Fong** will continue in a supporting role for all the ABI and NZGL related sequencing enquiries, scoping and the sequencing work.

NEW DEVELOPMENT

Genotyping by Sequencing (GBS)

NZGL is now providing Genotyping by Sequencing (GBS) set up as a service in collaboration with the Massey Genome Service and the Otago Genomics and Bioinformatics Facility (OGBF). The MGS is preparing the GBS libraries and the OGBF is providing the HiSeq sequencing. The Massey University team is also offering bioinformatics analysis on GBS including SNP calling.

REDUCTION IN ABI SEQUENCING PRICES

The MGS has been renowned as a service that supports scientists to meet their research goals. MGS has decided to lower the Sanger sequencing prices so that the money should not halt the valuable research carried out by New Zealanders. Please take advantage of the following services at lower costs!

Customer charge per sample	Previous pricing (NZD)	New Pricing (NZD)
ABI Sequencing-Full Service (plasmids and PCR products)	12	10
ABI Sequencing-Full Service (cosmids and BACs)	17	15
ABI Sequencing-Capillary Separation Service	7	6
ABI Sequencing-Capillary Separation Service with reaction cleanup	8	7
ABI Genotyping-Capillary Separation Service	9	7

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 the scoping of projects are provided with a good description of your project requirements. Please send enquiries regarding getting an NZGL quotation to Jackie McBride, NZGL business manager.

The contact details are:

business.manager@nzgenomics.co.nz

Phone: +64 3 4703543

We have information on our website regarding the Illumina MiSeq service at <http://genome.masse.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 performed 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

16S rRNA AMPLICON SEQUENCING

MGS is also offering 16S rRNA amplicon sequencing, which targets the V3-V4 hyper-variable region of the 16S rRNA gene. 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 with version 2 chemistry or an Illumina MiSeq 2X 300 base PE run with version 3 chemistry.

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 an hourly rate. If you want NZGL bioinformatics assistance, please include this in your NZGL online enquiry.

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.

The following three Agilent RNA 6000 Nano Labchip assays are provided by the MGS:

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

Illumina MiSeq Runs Options

NZGL and the MGS Services offer the following Illumina MiSeq runs

- 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)
- 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.

Bioinformatics Q&A Sessions

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.

Day of week: **Friday**

Time: 11am – 12pm (or by arrangement)

Massey University, Turitea campus, Science Tower D rooms 5.30/5.31

Staff available:

Patrick Biggs (p.biggs@massey.ac.nz)

Dave Wheeler (d.wheeler@massey.ac.nz)

Massey University, Albany campus, Oteha Rohe, Gate 4

Staff available:

Sebastian Schmeier: s.schmeier@massey.ac.nz

Martina Visnovska: m.visnovska@massey.ac.nz

Courier Bag Service

For 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](mailto:Pani.Vijayan@massey.ac.nz) (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

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