

Staff support

The genomics facility is run by highly experienced members of staff. They are able to offer the following support:

- Full service on Microarray and High through put sequencing platforms
- Training and assistance on user operated equipment
- Assistance with experimental design and costing for grant applications
- Advise on sample preparation
- Experimental troubleshooting



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A team of experienced bioinformaticians is also offering help for experimental design and data analysis.



Dr Venu Pullabhatla
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Dr Benjamin Lehne
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The BRC has invested in a High Performance Computing system, enabling researchers to more quickly analyse, store and archive vast quantities of data generated by our sequencing applications.

Don Lokuadassuriyage, sets up accounts and supports researchers using the cluster.



Mr Don Lokuadassuriyage
BRC Systems Administrator
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Who can use the genomics facility?

The Genomics facility is open for use for members of the BRC's Faculty of Translational Medicine, King's College London investigators and external users. Priority access is given to members of the BRC's Faculty of Translational Medicine and researchers within the BRC themes and cross cutting disciplines.

For more information visit:

<http://live.biomedicalresearchcentre.org/Professionals/Corefacilities/Genomicsfacilities/Genomicsfacilities.aspx>

If you are interested in running projects in the facility or want to find out more, contact:

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www.biomedicalresearchcentre.org



Guy's and St Thomas' NHS Foundation Trust and King's College London's comprehensive **Biomedical Research Centre**
Working together to deliver better health through research

June 2011

KING'S
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NHS
*National Institute for
Health Research*

Using the Genomics Core Facility

Biomedical Research Centre
7th floor, Tower Wing, Guy's Hospital

Have you thought about using the Biomedical Research Centre's genomics facility?

The National Institute for Health Research (NIHR) comprehensive Biomedical Research Centre (BRC) at Guy's and St. Thomas' NHS Trust and King's College London (KCL) has invested NIHR capital funding in a state-of-the-art Genomics core facility. The cutting-edge technologies will underpin the accelerated delivery of new diagnostic procedures and medical treatments to improve patient health.

The BRC Genomics facility is located on the 7th floor of the Tower wing, Guy's Hospital and offers a comprehensive range of genomics applications allied to Illumina equipment, other genomics platforms and downstream data management supported by a dedicated High Performance Computing system.

The Genomics facility has contributed to project outputs within the Guy's and St Thomas' Trust, KCL and welcome external users.

If you would like to use the facility contact Dr. Efterpi Papouli, the Genomics Facility Lead on efterpi.papouli@kcl.ac.uk

For general inquiries about BRC core facilities, contact the Core Facilities Manager, Prupti Malde on prupti.malde@gstt.nhs.uk

What equipment is available?

The genomics facility offers the following applications:

- Microarrays
- High-throughput sequencing
- Quality control
- Real-time PCR
- Capillary sequencing
- DNA shearing (Covaris)
- Liquid handling

High through-put sequencing platforms

HiSeq 2000



Genome Analyser IIX



The facility is equipped with one HiSeq 2000, which produces the largest data output currently offered by Illumina. One 2 x 100 bp read can generate up to 6 billion paired end reads from 8 lanes.

We also have three Illumina Genome Analyser IIX (GAIIx) sequencers, each capable of running up to 2 x 150 bp read length assays on 8 lanes, resulting in up to 640 million paired end reads per run.

Each machine can be used in several applications including:

- Whole genome Sequencing
- Exome Sequencing
- Targeted Sequencing
- Transcriptome Sequencing and small RNA discovery and analysis
- Chromatin immunoprecipitation sequencing (ChIPseq)
- Sequencing based methylation analysis
- SNP genotyping and structural variation analysis

The sequencing platforms are complemented by two cBots for automated library cluster generation.

Microarray platforms

The Illumina BeadArray™ system with the iScan™ reader



The iScan is a high resolution scanner that supports the imaging of the entire range of illumina array-based products. Applications include:

- SNP Genotyping for linkage studies, autozygosity mapping, association studies
- Copy number variant analysis
- Gene expression analysis
- Gene regulation and epigenetic analysis
- Cytogenetics

The Illumina BeadXpress™ Reader



The BeadXpress Reader is for low to mid-plex assays performed in 96 well plates. For example, 48-1536plex custom SNPs can be screened across 96 samples simultaneously.

Other equipment:

- Applied Biosystems 7900HT Real-time PCR
- Qubit™ Quantitation platform.

As well as the BRC-owned equipment listed above, researchers may also be able to access other King's College London equipment, including:

- Applied Biosystems 3730xl Capillary Sequencer
- A further 7900HT real-time instrument
- Tecan Genios Plate Reader
- Tecan liquid handling robotics
- Agilent BioAnalyser