Illumina NGS Sequencing at Department of Biology

An Illumina NEXTSeq 550 Sequencer is available for use by all groups at the Department of Biology. The sequencer is located in the Biocenter building 2.1.

The Illumina sequencing platform is the most used and commercial kits for construction of Illumina compatible sequencing libraries can be purchased from a range of suppliers for the analysis of many different biological questions. The use of such kits will lead to indexed sequencing libraries, which can be pooled and sequenced on the NextSeq at the prices quoted below.

Current prices through 2024 including 15 % surcharge for internal users*:

- USD 1572 for 130 M reads (150 bp or 2x75 bp long)
- USD 2531 for 400 M reads (75 bp long)
- USD 2153 for 130 M reads (300 bp or 2x150 bp long)
- USD 4123 for 400 M read (150 bp or 2x75 bp long)
- USD 6607 for 400 M (300 bp or 2x150 bp long)

*We have an agreement with Illumina, providing 8% discount on regular list prices. All internal (BIO users) pay a 15% surcharge, while external Non-BIO UCPH users pay a 30% surcharge. The prices above include the 15% surcharge. The kit surcharge pays for the Illumina service contract on the machine.

To set things in perspective, a typical RNAseq sample for mammalian cells will require 30-40 M reads, meaning that 10000 DKK will allow the analysis of at least 10 samples to give a global view of transcription. For bacterial cells much lower sequencing depth is sufficient. A full human genome can be sequenced to ~30X sequencing depth in a single run for 32000 DKK but for large genome sequencing projects commercial suppliers such BGI are much cheaper (currently in the range of $600 for a human genome).

SCARB is managing the machine and we will do what we can to help BIO groups that want to start sequencing, but we are not a core facility in the sense that we perform the sequencing for you.
We have set up a booking calendar for the machine and here BIO groups can order the Illumina flowcell/reagents required for sequencing and book run times. When you have booked a time slot in the system and selected the type of sequencing, we will order the required sequencing flowcell/reagents and receive/store it safely until you need it.

If you want to start using the Illumina NEXTSeq 550 Sequencer
Start by contacting lisbeth.borbye@bio.ku.dk to receive and sign a contract (see below) to become a PI/VIP user and receive access to the booking system. You will also receive a Quick Guide outlining the steps below.

To purchase flowcell/reagents and reserve runtimes:
Step 1: Go to http://www2.bio.ku.dk/nextseq/
Step 2: Provide VIP, superuser (responsible for setting up, loading and starting the machine), KU alias-, KU sted- and KU spec (if any) information, select the flowcell/reagents
Step 3: Select date(s) for run

To perform sequencing:
Step 1: Superuser prepares the sample sheet, loads samples and starts the run.
Step 2: Superuser downloads data from machine or via Illumina Basespace.

KU-BIO NextSeq550 User Contract

For the use of the KU-BIO NextSeq550, the following rules apply:

1. Users should be group leaders employed at KU/UCPH.
2. Users are responsible for making sure an approved superuser of the NextSeq550 instrument is available to perform the sequencing run. If a user has no superuser in his/her own group or any agreement with an existing superuser, who will be responsible, he/she cannot book the system.
3. New superusers can be added and get their own login, when they present proof of having been trained by Illumina, have previous documented experience with the NextSeq system or have used the system together with an existing superuser and have been judged capable of setting up and managing runs. Contact Lisbeth Borbye (lisbeth.borbye@bio.ku.dk) to get login.
4. Superusers must always use the NextSeq booking system both to order kits and book run times.
5. Users are responsible for payment of the sequencing services (kit and run time) that they book and for providing their superusers with a KU-alias, KU-sted and KU-spec codes to cover payment at the time of kit purchase.
6. Users employed at BIO pay a 15% user fee on top of the cost for the selected kit. External users pay a 30% user fee.
7. Superusers are able to manage their own runs, but as a rule, should do their best to adhere to the booked schedule. If a run is postponed, the already-ordered and paid-for kit can be used on the later date.
8. Superusers should inform Amal Al-Chaer (aac@bio.ku.dk) immediately, if regretting a kit purchase.
9. Kits are ordered on an on-demand basis. To ensure kit availability, the BIO NextSeq550 should be booked at least 7 days in advance. For inquiries about kit arrival and availability, please contact Amal Al-Chaer (aac@bio.ku.dk).
10. Individual superusers can book the system up to 7 days per month. If more runs are needed, see contacts.
11. Problems with the NextSeq System should be reported to Christian Vaagensø (christian.dalager.vaagenso@bio.ku.dk).
12. BIO is not responsible for costs related to failed sequencing runs.
13. If sequencing runs fails because of NextSeq hardware problems (to be determined by Illumina), the Illumina Silver service plan will provide a replacement kit.

By signing this contract, I confirm that I have read and will adhere to the above-mentioned rules for use of BIOs NextSeq sequencing equipment.

_____	_____
Name of PI/VIP	title
_____	_____
KU-affiliation	date