Main Instruments-SacLab (NORCE)

QIASymphony: Automated nucleic acid extraction platform

Link: https://www.qiagen.com/us/shop/automated-solutions/qiasymphony-spas-instruments/#orderinginformation

• The QIAsymphony SP enables extraction of DNA, RNA, and bacterial and viral nucleic acids from a wide range of starting materials with a range of QIASymphony kits,

• By using the RNA kits, DNA is removed by treatment with RNase-free DNase. We are currently extracting RNA from different fish tissues as: gills, liver, head kidney, heart, brain and telencephalon.

• By using the QIAsymphony DSP DNA kits, we are extracting DNA from sediments, several zooplankton/algae and tissues. We are also extracting bacteria DNA and virus DNA/RNA using the QIASymphony Virus/pathogen kit.

Hamilton MicroLab STARlet: Automated liquid handling Platform

Link: https://www.hamiltoncompany.com/products/automated-liquid-handling/liquid-handling-workstations/microlab-star-line

Hamilton uses air displacment pipetting allowing accurate pipetting and repeatabltity from microliter to large volume.

Four protocols are available:
1) Sample Dilution.
2) PCR Set-up.
3) Normalization and/or Quantification using Qubit.
4) cDNA Synthesis.

Input samples:
• Eppendorf tubes
• 96 Well plate
• 384 well plate

Axio Scan.Z1 Slide Scanner:

Links:

https://www.zeiss.com/microscopy/int/products/imaging-systems/axio-scan-z1.html

https://slideplayer.com/slide/10473520/

Bright field and Fluorescence detection

Holds until 100 slides contemporary: 4 slides per frame

Large format slides (50mm x 75 mm) can be used

Slides can be loaded and unloaded during scanning

The QX200 Droplet Digital PCR (ddPCR)

Link: http://www.bio-rad.com/en-no/product/qx200-droplet-digital-pcr-system

The QX200 Droplet Digital PCR (ddPCR) does an absolute quantification of DNA or RNA copies in a sample and seems to be less sensitive to primer efficiency and inhibitors than PCR /qPCR.

For more information on comparison of ddPCR and qPCR; Thermo Fisher has published a thorough explanation of how the different quantitative PCR technologies work.
The process includes an initial step making droplets (approx. 20.000 droplets of your sample), then step of cycling droplets and finally the read of droplets.

• Digital Droplet PCR can be run with both chemistries: Probes (incl. multiplexing) and Eva Green.
• Dynamic range of ddPCR is 1-120.000 copies.
• Result is given as copies/µl.

Pentra C400:

Link: http://www.horiba.com/us/en/medical/products/clinical-chemistry/abxpentra-400/abx-pentra-400-details/pentra-c400-917/

Spectrophotometry (Colorimetry and Turbidimetry) and Potentiometry (direct and indirect). Analysis in Pentra C400 are conducted using Spectrophotometry (colorimetry and turbidiometry) and potentiometry. Input samples can be plasma, serum (and urine).

Maximum sample capacity is 60 samples (6 racks of 10 samples).

Analyses tested in salmonids include so far:
• Spectrophotometry
1.CO2
2.Calcium
3.Glucose
4.Magnesium
5.Phosphorous
6.Numbered list item

•Potentiometry (ISE module)
1.Potassium
2.Chloride
3.Sodium

Guava®easyCyte Flow Cytometers:

Link: https://www.umces.edu/sites/default/files/guava-easycyte-ht-system-user-s-guide.pdf

Guava®easyCyte Flow Cytometers: The guava easyCyte systems uses patented microcapillary technology that enables absolute cell counts.

Input samples:
- 96 well plate
- 1-10 samples tubes

The SPARK from TECAN:

Link: https://www.tecan.com/blog/spark-multimode-microplate-reader-for-high-performance-cell-based-fluorescence-assays

The SPARK from TECAN is a multimode reader that performs accurate and sensitive measurements of fluorescent cell-based assays.
Available protocols: 1) Elisa 2) ATPase Enzyme activity (Gills, intestine, Kidney etc.)

Perhaps this photo could represent the lab?? we can discuss the set up after holidays