NAxtra™ 2.0 Aquaculture NA Extraction Kit

Fast and sensitive aquaculture sample preparation

The NAxtra™ 2.0 Aquaculture NA (nucleic acid) extraction kit is a magnetic bead-based product intended for DNA and RNA extraction from various types of fish samples (e.g. kidney, gills, liver, milt, swabs, blood and roe fluid) and filter samples from e.g filtered sea water. The kit is developed to facilitate sensitive recovery of pure and high integrity nucleic acids for analysis by down-stream applications like qRT-PCR and next-generation sequencing. The extraction time is 20 minutes when run on a KingFisher™ Flex automation system. The kit may be combined with sample collection devices/solutions and downstream assays of your choice*.

Manual and automated extractions

Protocol options for both manual and automated extractions.

Fast extraction

Fast extraction of nucleic acid using automated liquid handing robots (<20 min).

Multiple tissue types

Suitable for multilple tissue types, for example: kidney, gills, liver, milt, swabs, blood, roe fluid, filter samples.

Sample volume

Sample volume of 50-200 µl.

Elution volume

Elution volume of 50-200 µl.

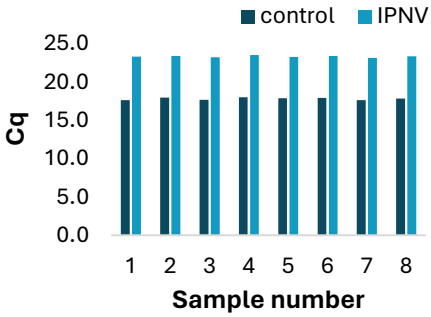
Attractive price

Highly attractive pricing.

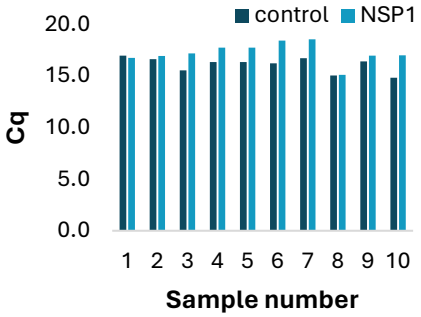
Efficient extraction of nucleic acid from common salmon pathogens

To validate nucleic acid extraction efficiency from commonly occurring aquaculture pathogens a total of 8-10 salmon samples known to be positive for four different pathogens were processed using the NAxtra™ 2.0 Aquaculture NA extraction kit and analyzed by qRT-PCR using primers towards target virus and internal controls (Figure 1).

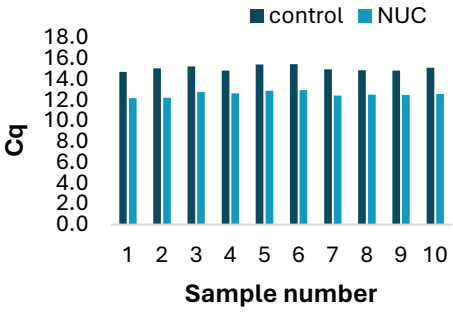
Kidney: Infectious Pancreatic Necrosis Virus (IPNV)



Heart: Salmonid Alphavirus (NSP1)



Gills: Paranucleospora theridion (NUC)



Roe fluid: Infectious salmon anemia virus (ISAV)

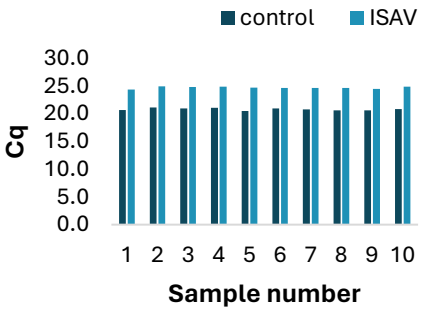


Figure 1

Data showing Real Time qRT-PCR results from salmon extracted using NAxtra™ 2.0 Aquaculture NA extraction kit. A total of 8-10 salmon samples from the indicated tissue types known to be positive of IPNV, NSP1, Paranucleospora theridion and ISAV respectively were homogenized and nucleic acids were extracted according to the standard protocol using a Hamilton MicrolabStar automation system. Next, 2.5 µl of the eluates were analyzed by RealTime qRT-PCR using target-specific primers. The results demonstrate that NAxtra™ 2.0 Aquaculture NA extraction kit facilitate consistent and efficient extraction as well as robust quantification using qRT-PCR. The extraction processing time is approximately 1 hour 10 min for 384 samples using the NAxtra™ 2.0 Aquaculture NA extraction kit in a Hamilton Microlab Star.

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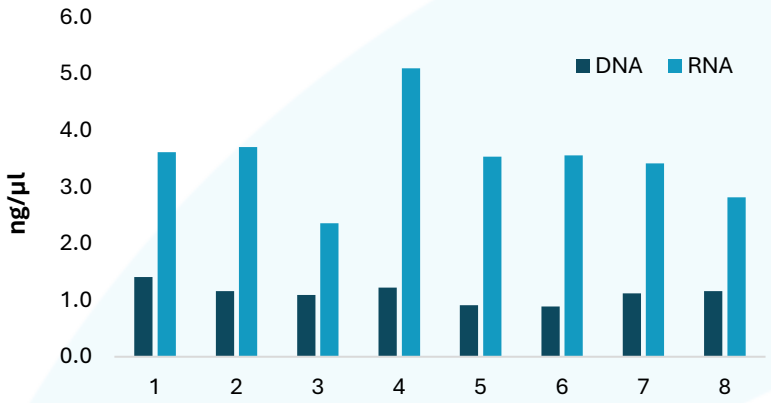
High yield of nucleic acids extracted from filtered sea water

Monitoring environmental nucleic acids represents a promising methodology for early detection of aquatic invasive species and diseases at low density at any life stage or season. However, obtaining results of sufficient quality relies on robust and sensitive isolation of nucleic acids. To investigate the yield of DNA and RNA from filtered sea water samples in a series of eight samples from a Norwegian fjord, each 200 ml, were filtered and extracted using NAxtra™ 2.0 Aquaculture NA extraction kit (Figure 2).

Figure 2

A series of eight sea water samples of 200 ml were filtered through standard 0,45µm filters prior to total nucleic acid extraction using Hamilton MicrolabStar automation system. Nucleic acids were eluted in 50 µl and the concentration of DNA and RNA measured using Qubit. The results demonstrate that NAxtra™ 2.0 Aquaculture NA extraction kit facilitates superior yield of both DNA and RNA from filtered sea water.



The results presented here demonstrate that the NAxtra™ 2.0 Aquaculture NA extraction kit shows excellent efficiency in nucleic acid extraction from common pathogens and respective infected salmon tissue-types. Furthermore; the kit is highly efficient in extracting environmental nucleic acids (eNA) from filtered sea water samples supporting that the NAxtra™ 2.0 Aquaculture NA extraction kit is a favourable option for eNA analyses and continuous monitoring of the microflora surrounding the net pens at aquaculture sites. The short processing time allows for efficient processes for high throughput laboratories.

Lybe™ Scientific is a biotechnology company localized in Trondheim, Norway with basis in patented technology. Lybe™ develops and manufactures all products in-house and offers sample preparation kits for a selection of biological sample types. Our main goal is to deliver high-quality products that simplify and shorten the sample preparation steps in diagnostic pipelines within both human, veterinary and aquaculture medicine.

Ordering info

NAxtra™ 2.0 Aquaculture NA nucleic acid extraction is offered as a kit containing reagents for 384 reaction units. The product may be offered in bulk quantities.

Contact us at contact@lybescientific.com for more information and ordering.

Cat.no	Product
LSNXE0384	NAxtra™ 2.0 Aquaculture NA extraction kit, 384 reactions

The kit is intended for research use only and should be used for isolation of total nucleic acids to be analyzed by downstream applications such as for example Real-Time qRT-PCR and next-generation sequencing. The kit may be combined with sample collection devices, preservation reagents and downstream assays of your choice. It is the sole responsibility of the user to validate the performance in combination with preferred downstream assay and / or automation device.

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