



User manual

NBB[®]-PCR (Article No. 7.85420.782)

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1. Information

PCR broth for fast and universal detection of

Beer spoiling microorganisms, such as *Lactobacilli*, *Pediococci*, *Pectinatus* and *Megasphaera*

in yeast and clear / cloudy beer samples.

NBB[®]-PCR (pH 5.7 ± 0.2) is a ready-to-use enrichment broth for the detection of beer spoiling bacteria by PCR and real-time PCR methods. NBB[®]-PCR is compatible with all standard PCR and real-time PCR methods from different manufacturers.

Due to an optimized and regulated quality-controlled production process, the medium does not contain any ingredients, which impair DNA amplification and detection (real-time PCR). In addition the medium is free from contaminating DNA, which is controlled and ensured by internal and external validations. The medium is optimized for microbiological enrichment and therefore allows no culture detection of bacteria, because no indicator dye is included.

NBB[®]-PCR broth can be used for the molecular biological detection of:

- Yeast samples
- Unfiltered beer, containing yeast
- Filtered beer
- (Rinse-)Water samples

2. Handling

Required materials

A) yeast samples:

A.1. liquid yeast

Sterile tubes - glass or plastic with screw cap
Sterile pipette tips

A2. viscous yeast

Sterile tubes - glass or plastic with screw caps
Sterile swabs

Or



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Ready-to-use tubes with integrated swabs
Serological pipette with pipetting

Vessel/Container for anaerobic incubation
Laminar flow workbench
Incubator

B) Membrane filters (e.g. clear beer samples):

Sterile tubes - glass or plastic with screw cap
Serological pipette with pipetting
Sterile forceps
Membrane filtration unit
Vessel/Container for anaerobic incubation
Laminar flow workbench
Incubator

C) Cloudy beer samples

Sterile swing top bottles or laboratory vessels (with appropriate volume)

Vessel/Container for anaerobic incubation
Laminar flow workbench
Incubator

Application protocol

General information:

Please be sure to work under sterile conditions by using a laminar flow workbench in order to avoid secondary contamination of samples.

NBB[®]-PCR should not be heated because it contains temperature-sensitive components.



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A) Yeast samples:

liquid yeast (pipettable)

Fill 9 mL NBB[®]-PCR under sterile conditions in a sterile tube with a screw cap or in a plastic tube with integrated swab using a sterile serological pipette.

Add ca. 1-2 mL liquid yeast using a sterile pipette into the test tube filled with culture medium.

viscous yeast (e.g. harvest yeast)

Fill 9 mL NBB[®]-PCR under sterile conditions in a sterile tube with a screw cap or in a plastic tube with integrated swab using a sterile serological pipette.

Take a sample of (harvesting) yeast with the sterile swab and transfer the swab into the prefilled tube.

In order to avoid secondary contamination never touch the swab at the wadding or stick. After removal of the swab packaging, touch the swab only at the non-sterile cover. After sampling, put the swab immediately into the tube and close it with the screw cap. The swab may stay in the test tube during the incubation.

B) Membrane filters (e.g. clear beer samples)

Filtrate your sample by using a filtration unit.

Fill 10 mL NBB[®]-PCR under sterile conditions in a sterile tube with a screw cap or in a plastic tube with an integrated swab using a sterile serological pipette.

Transfer the membrane filter with sterile forceps into the prefilled tubes. The filter should be completely covered by the culture medium.

C) Cloudy beer samples

Mix your sample in a ratio of 1: 1 with NBB[®]-PCR(e.g. in sterile swing top bottles or in sterile laboratory bottles (Duran[®]).)

A suitable mixing ratio is e.g. 25 mL beer sample + 25 mL NBB[®]-PCR.



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Notice: Please avoid stronger dilutions of NBB[®]-PCR as 1:1. Only in this ratio all important nutrients and growth substances are present in a sufficient concentration.

Incubation

Incubate the sample in an incubator – if possible- under **anaerobic** conditions for 2-3 days at 26-30°C/79-96°F.

Evaluation

At the end of the incubation period please transfer the volume as described in the purification protocol of the PCR or real-time PCR system.
Strong turbidity of the medium indicates a strong contamination.
Please note that in most cases after the incubation period there is no turbidity visible.



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3. Product Information

Packaging and Content

Unit	(9 x 250 mL in glass bottles)
Unit size	approx. 22 cm x 22 cm x 18 cm/ 8.6 in x 8.6 in x 7.1
Unit gross weight (box)	approx 4.1 kg/ 9 lbs.

Storage

Store under dark and dry conditions at 4-8°C/ 40-46°F according to product specification. Do not freeze product.

Waste Disposal

No dangerous goods.

Not a hazardous substance.

Please note your local disposal regulations.

Uninoculated broth can be disposed of with normal laboratory waste.

Inoculated and incubated samples are to be sterilized before disposal at a temperature of 121°C /250°F for 20 min.

Warnings

Please do not cook or freeze the product. NBB[®]-PCR should not be heated because it contains temperature-sensitive components.

A slight precipitate in NBB[®]-PCR is commonly observed. The precipitate is normal for some ingredients. The medium can be used without restriction with precipitation.



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4. Related products

Sample type	Product	Format	Method	Item no.	Packaging	Incubation			Analysis
						T [°C]	t [d]	Condition	
Yeast samples Selected, harvested and brewing yeast Yeast sediments	NBB®-B	Broth in bottle	0,5-1 ml of sample + 10-20 ml of NBB®-B	2.04710.782	9 x 250 ml (glass bottle)	28°C	3-5	anaerobic	qualitative
		Broth in tubes		2.04723.646	20 x 10 ml (tube)				
Yeast-cloudy beers Green beer Unfiltrate Wheat beer	NBB®-C	Concentrated broth	95 % of sample + 5 % of NBB®-C	2.04711.782	9 x 250 ml (glass bottle)	28°C	7-14	anaerobic	qualitative
Clear beers Membrane filtered samples	NBB®-A	Agar	Filtration of 50-200 ml of sample	2.04709.782	9 x 250 ml (glass bottle)	28°C	5-7	anaerobic	quantitative
Water, rinsing water Membrane filtered samples	NBB®-A	Agar	Filtration of 50-200 ml of sample	2.04709.782	9 x 250 ml (glass bottle)	28°C	5-7	anaerobic	quantitative
Environmental air Sampling of airborne microorganism on agar plates	NBB®-A	Agar	Direct sampling	2.04709.782	9 x 250 ml (glass bottle)	28°C	5-7	anaerobic	quantitative
Surfaces in filling plants Hygiene monitoring using swabs	NBB®-B-AM	Broth	1 swab in 10 ml of NBB®-B-AM	2.04706.782	9 x 250 ml (glass bottle)	28°C	3	aerobic	qualitative
	NBB®-P	Powder	For the in-house production of NBB®-A and NBB®-B, using beer from own production.	2.04716.462	300 g (bag)				
Laboratory accessories	Smear swabs, without tube			2.04725.444	100 pc. (bag)				