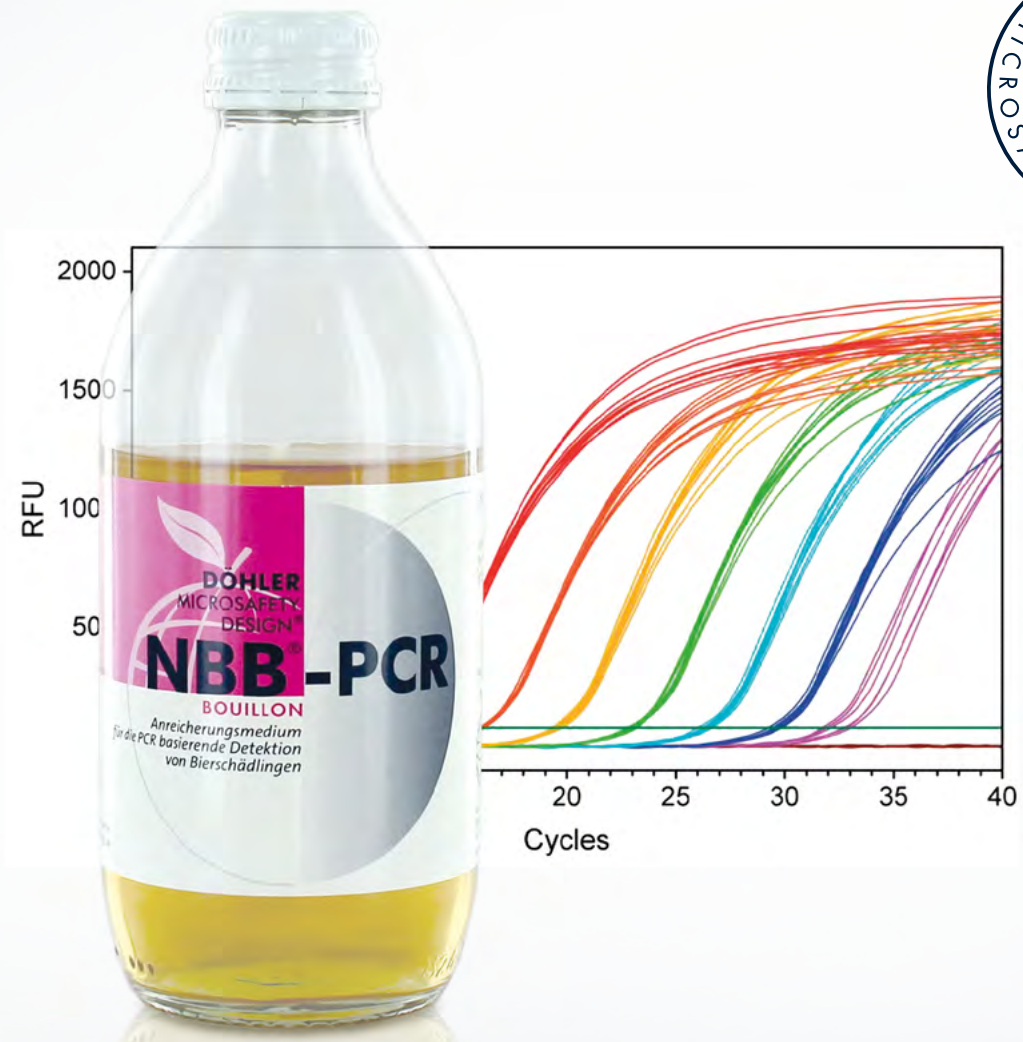
DÖHLER
NATURAL FOOD & BEVERAGE INGREDIENTS

NBB®-PCR Broth –

The reliable, fast and universal enrichment for the PCR detection of beer spoiling microorganisms

DÖHLER MICROSAFETY DESIGN DMD®



WE BRING IDEAS TO LIFE.

NATURAL INGREDIENTS
INGREDIENT SYSTEMS
INTEGRATED SOLUTIONS

NBB®-PCR Broth –
The reliable, fast and universal enrichment for the PCR detection of beer spoiling microorganisms

For more than 30 years, Döhler has been offering innovation, ready-to-use culture media under its NBB® brand for the fast and reliable trace detection of beer spoiling microorganisms, such as Lactobacillus, Pedicoccus, Pectinatus and Megasphaera, in all samples collected in breweries.

The newly developed and ready-to-use NBB®-PCR Broth now enables optimised enrichment of these beer spoiling microorganisms for detection using molecular biological methods such as PCR or real-time PCR.

In addition to conventional culture methods, molecular biological detection of beer spoiling microorganisms is increasingly gaining importance.

Besides fast and reliable approvals, the option of identifying existing microorganisms down to the specific species is the driving force behind the establishment of this procedure in breweries.

The ready-to-use NBB®-PCR Broth ensures reliable and fast enrichment of beer spoiling microorganisms within 48 to 72 hours. NBB®-PCR is compatible with all PCR or real-time PCR systems available on the market.

Regardless of the PCR or real-time PCR system you use, NBB®-PCR Broth is always compatible and designed for universal use.

The NBB®-PCR Broth is suitable for the enrichment and subsequent PCR or real-time PCR analysis of:

- yeast samples
- yeast-turbid beers
- filtered beers
- water and rinsing water
- airborne microorganism sampling
- swab samples for hygiene monitoring

Reliable detection
through optimised production processes and complete quality control

Efficient and selective enrichment of microorganisms continues to be necessary despite the increased sensitivity of molecular biological methods.

Because culture media consist of natural raw materials, there is a risk of DNA from beer spoiling microorganisms already being present in the broth during production. This DNA would generate false positive results for the analysed samples during detection.

Using a specially optimised production process, Döhler ensures that the ready-to-use NBB®-PCR Broth does not contain any DNA from beer spoiling microorganisms.

This is continuously tested and certified using strict and complete quality control, from raw materials to end products.

Fast enrichment
even of slowly growing beer spoiling microorganisms

With the optimised nutrient combination and the exclusion of ingredients inhibiting or interfering with PCR or real-time PCR, even enrichment of slowly growing microorganisms such as *Lactobacillus lindneri* or *Pediococcus damnosus* is possible within 48 to 72 hours. The ratio of growth substances and inhibitors in the medium ensures optimum selectivity, which has been confirmed in numerous analyses.

Strictly anaerobic beer spoiling microorganisms such as Pectinatus and Megasphaera can also be detected in this period of time. The detection limit is also strongly influenced by the PCR or real-time PCR detection system used – i.e. purification, subsequent detection, as well as by the thermal cycler itself – rather than being solely dependent on the enrichment method.

Universal medium
for all samples in a brewery and for detection with all PCR and real-time PCR systems available on the market

The ready-to-use NBB®-PCR Broth is suitable for detecting microorganisms in all samples collected in breweries. Whether you need to detect beer spoiling microorganisms in yeasts, such as propagation and harvesting yeasts, or in filterable and yeast-turbid beer, NBB®-PCR Broth can be used universally with all samples.

Detection performed using all PCR or real-time PCR systems available on the market has shown that NBB®-PCR Broth is a suitable pre-enrichment medium for all of these systems. NBB®-PCR can be used as an enrichment medium regardless of the PCR or real-time PCR detection system you choose or have chosen.

NBB®-PCR Broth – Your advantages

The ready-to-use NBB®-PCR Broth offers reliable, fast and universal enrichment for the PCR or real-time PCR-based detection of beer spoiling microorganisms from all samples collected in your brewery.

Reliable detection without false positive results

Potentially contaminating DNA of beer spoiling microorganisms is detected and eliminated using the special production process and complete quality control – for a reliable PCR or real-time PCR result without false positive results.

Designed for immediate use

NBB®-PCR Broth is ready to use immediately. Cumbersome and time-consuming weighing, preparing, adjusting the pH and autoclaving is a thing of the past and by using specific test strains, we have already taken care of the extensive quality control for you.

Fast enrichment within 48 to 72 hours

Thanks to the optimised composition of nutrients and the exclusion of ingredients inhibiting PCR, even slowly growing microorganisms can be detected. Clear detection of all beer spoiling microorganisms, including in trace amounts, is achieved within 48 to 72 hours.

Universal medium for all brewery samples and all detection systems

NBB®-PCR Broth is suitable for the enrichment of all samples collected in breweries, such as yeast or filterable and yeast-turbid beer. With this enrichment, beer spoiling microorganisms can be detected using all PCR or real-time PCR detection systems.

NBB®-PCR – Product data

Material to be tested	Relevant target microorganisms	Product	Description	Article no.	Packaging unit
Yeast – propagation, assimilation, pitching and harvesting yeast **Clear beer –** membrane filtered samples **Yeast-turbid beer –** green beer, unfiltrate, wheat beer **Water, rinsing water –** membrane filtered samples **Ambient air –** enrichment after collection of airborne bacteria on agar plates **Hygiene monitoring of surfaces of filling units –** enrichment of swab samples	Beer spoiling microorganisms: *Lactobacilli ssp., Pediococci ssp., Pectinatus ssp., Megasphaera ssp.*	NBB®-PCR Broth	Ready-to-use liquid culture medium used for enrichment and subsequent PCR or real-time PCR detection	7.85420.782	9 x 250 ml, glass bottle

Are you interested in more information on the NBB®-PCR Broth or our other innovative culture media for beverages? Visit our website at *www.doehler-dmd.com* or get in touch by email at : *dmd@doehler.com*

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