50725 Nocive Brewers Bacteria Broth, modified (Pedi-Lacto Selective Beer Broth, Broth for the detection of bacteria harmful to beer)

Selective medium used for the detection of contaminating/spoilage microorganisms in brewery.

Composition:

Ingredients	Grams/Litre
Pancreatic digest of casein	5.0
Yeast extract	5.0
Beef extract 2 g/l	2.0
Polysorbate 80	0.5
Potassium acetate	6.0
Disodium phosphate	2.0
L-Cysteine hydrochloride	0.2
Chlorphenol Red	0.07
Dextrose	15.0
Maltose	15.0
L-Malic acid	0.5

Final pH 5.8 ± 0.2 (at 25 °C)

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Appearance: Light grey to light brown colored, homogeneous, free flowing powder.
Gelling: Firm
Color and Clarity: Pink or red colored, clear to turbid gel forms in petri plates.

Directions:
Suspend 51,3 grams of the medium in 500 ml of distilled water and 500 ml of beer without gas. Mix well. Heat for one minute with frequent agitation until the medium is completely dissolved. Sterilize in autoclave at 121°C for 15 minutes.

Principle and Interpretation:
Nocive Brewers Bacteria Broth (NBB broth) is a selective medium for the detection of beer spoiling microorganisms. This medium (was developed in Germany by Back and Dachs [1,2] and was later modified by Nishikawa and Kohgo [3] to provide a less inhibitory medium for beer spoiling organisms.

Pancreatic digest of casein, yeast extract and beef extract provide nitrogenous compounds, vitamins and other essential growth nutrients for the spoilage organisms. Dextrose and maltose are the fermentable sugars and chlorphenol red is the indicator which makes the acid production visible by change the colour to yellow. Polysorbate 80 is added to neutralize phenols, hexachlorophene and formalin. Potassium acetate instead of sodium acetate makes the medium less inhibitory for the growth of spoilage bacteria. L-cysteine hydrochloride is the reducing agent. L-Malic acid is a beneficial metabolite for the growth of lactic acid bacteria. Disodium phosphate is the buffering agent. The low pH is for optimal growth of lactic acid bacteria and on the same time it inhibits most other organisms.

Cultural characteristics after 4 days at 30-35°C.

Organisms (ATCC)	Growth	Acid production
Lactobacillus brevis (8291)	+++	trace yellow- yellow
Pedicoccus acidilactis (8042)	+++	trace yellow- yellow
Pedicoccus damnosusi (29358)	+++	trace yellow- yellow

References:
1. W. Back, Bierschädliche Bakterien. Nachweis und Kultivierung bierschädlicher Bakterien im Betriebslabor, Brauwelt, 120, 1562 (1980)
2. E. Dachs, NBB – Nachweismedium für bierschädliche Bakterien, Brauwelt, 121, 1778 (1981)
3. M. Nishikawa, M. Kohgo, Master Brew Am Association Q22-61 (1985)
4. I.E. Alcamo, Fundamentals of Microbiology, 6th Ed., Jones and Bartlett Publishers (2001)
5. L. Jespersen, M. Jakobsen M., Int. J. Food Microbiol., 33:139-55 (1996)

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.