KOH 3%

(Potassium Hydroxide Test, String Test)

REF CK9860

Intended Use

This test can be used to differentiate Gram positive from Gram negative organisms.

Background

The Potassium Hydroxide test has its advantages; it is simple and easy to use, rapid and inexpensive. In laboratories this test could be used in addition to the Gram stain for primary differentiation of isolates.

Many organisms such as Bacillus and Clostridium spp. that have lost some of the integrity of their cell wall appear Gram negative on staining resulting in possible misidentification.

In the presence of Potassium Hydroxide, Gram negative cell walls are broken down releasing viscid chromosomal material, this causes the bacterial suspension to become thick and stringy. Gram positive bacteria remain unaffected.

Precautions

This product is for in-vitro diagnostic use and should be used by properly trained laboratory professionals. Universal precautions should be taken in the handling, processing and discarding of all materials used to perform the test. Do not use reagents after the expiration date shown on the product label has expired.

Methods

Use a fresh 18-24 hour culture, older cultures may give unreliable results.

Slide:

Place a single drop of 3% Potassium Hydroxide on a clean microscope slide.

Emulsify a few colonies of the suspect organism in the drop of Potassium Hydroxide to make a dense suspension.

Stir continuously for up to 60 seconds and pull the loop gently away from the suspension.

Observe for any changes, a positive result is demonstrated by a string of the suspension following the loop when raised.

Results

Gram negative bacteria – Organisms become thick, stringy and form long strands within the first 30 seconds of mixing.

Gram positive bacteria – absence of stringing after mixing, suspension is unaltered

Limitations

Older cultures (>48 hours) may give unreliable results after mixing with KOH. This is common with certain species such as *Achromobacter* spp., *Brucella melitenis*, *Pseudomonas paucimobilis*, *Moraxella* spp., etc.

Although a useful test, a negative result does not prove conclusively that an organism is Gram positive.

Quality Control

A quality control check should be undertaken daily or immediately prior to use.

Bacteria
Positive control-
Escherichia coli ATCC 25922
Negative control-
Staphylococcus aureus ATCC 25923

Shelf Life & Storage
The expiry date, storage temperature (2-8^{0}C) and storage conditions are indicated on the outer package label.

Materials provided
Each pack contains 5 dropper bottles, each dropper bottle contains 3ml of 3% Potassium Hydroxide.

Materials required but not provided
Sterile loops or needles.
Glass slide, petri dish.

References
Standards Unit, National Infection Service, PHE. UK SMI, TP30-Potassium Hydroxide Test, Issue 4, 02.04.19.
Bourgault, A.M. et al. Evaluation of the KOH test and antibiotic disk test in routine clinical anaerobic microbiology. J. Clin. Microbiol. 1988; 26:2144-6.

REF	Catalogue number
LOT	Batch number
	Use by date
IVD	In-Vitro Diagnostic device
Σ	Contains sufficient for <n> tests
	Temperature storage limitations
	Consult instructions for use
	Manufacturer

Issue	Date	Comments
4	22/07/2020	IFU format revision.

CE