



## VP (KOH) Reagent Droppers

Reagents for performing the Voges-Proskauer test, in dropper bottles.

### INTENDED PURPOSE

Kit of reagents for the execution of Voges-Proskauer test used as qualitative test to distinguish between members of Enterobacteriaceae on the basis of the capability to produce acetylmethylcarbinol (acetoin) as a fermentation product from glucose. This test is intended as an aid in the diagnosis, requiring further tests to complete the diagnostic results.

### DESCRIPTION

VP (KOH) Reagent Droppers is used for the identification of bacteria, particularly in the Enterobacteriaceae family, based on production of acetylmethylcarbinol (acetoin) from glucose metabolism.

### KIT CONTENT

- 10 dropper bottles of sodium alpha naphthol (2.5 ml)
- 10 dropper bottles of potassium hydroxide (2.5 ml)

### METHOD PRINCIPLE

Certain bacteria metabolize glucose to produce acetylmethylcarbinol when cultivated in specific media such as MR-VP broth. Upon addition of Voges-Proskauer reagents, acetylmethylcarbinol is oxidized to diacetylmethylcarbinol, which in turn reacts with creatine (from the broth) to form a red-colored compound.

### MATERIALS REQUIRED BUT NOT PROVIDED

Standard microbiological supplies and equipment such as: inoculating loop, pipettes, culture media, quality control organisms.

### REAGENTS

- 5% (w/v) solution of alpha naphthol in ethyl alcohol
- 40% (w/v) solution of potassium hydroxide in distilled water

### SPECIMEN

Collect specimens in sterile containers or with sterile swabs and transport to the laboratory. Process each specimen using procedures appropriate for that sample. This product is recommended for use only with pure cultures.

Refer to specific guidelines for more detailed information.

### TEST PROCEDURE

1. Inoculate a tube of MR-VP broth with a pure culture of the test organism and incubate at  $35 \pm 2^\circ\text{C}$  for 24-72 hours.
2. Following incubation, aseptically transfer 1-2 ml of the broth culture to a separate test tube.
3. Add 0.6 ml (12 drops) of alpha-naphthol and 0.2 ml (4 drops) of KOH 40% and shake well to expose the medium to atmospheric oxygen (necessary for oxidation of acetoin to obtain a colour reaction).

### INTERPRETING RESULTS

A positive test is given by the development of a pink to bright red colour within 20 minutes after addition of reagents. No color development indicates a negative reaction.

**Notes:** Development of a copper colour should be considered negative. Positive and negative controls should be run simultaneously with the organism to be tested (see QUALITY CONTROL)

### STORAGE

2-8°C in its original packaging. Keep away from sources of heat and avoid excessive changes of temperature. Use until the expiry date indicated on the label. Eliminate without using if there are signs of deterioration.

### SHELF LIFE

2 years.

## QUALITY CONTROL

**Appearance control:** The alpha-naphthol solution appears limpid and beige; the potassium hydroxide solution appears clear limpid colourless.

Control strain		Characteristic reactions
<i>Listeria monocytogenes</i> 4b	WDCM 00021 ATCC® 13932 NCTC 10527	Positive reaction: Formation of a pink to bright red colour
<i>Enterobacter cloacae</i>	WDCM 00083 ATCC® 13047 NCTC 10005	
<i>Escherichia coli</i>	WDCM 00013 ATCC® 25922 NCTC 12241	Negative reaction: No colour change

## PERFORMANCE CHARACTERISTICS

Performance testing of VP (KOH) Reagent Droppers was carried out using the QC strains listed above. The results obtained met the established criteria.

## LIMITATIONS

One should allow at least 20 min for color to develop before considering the Voges-Proskauer test negative.

## WARNING AND PRECAUTIONS

- 1) **For *in vitro* diagnostic use (IVD).**
- 2) **For laboratory professional use only.**
- 3) Operators must be trained and have certain experience. Please read the instructions carefully before using the product. Reliability of assay results cannot be guaranteed if there are any deviations from the instructions in this document.
- 4) Consult the Safety Data Sheet (SDS) for information regarding hazards and safe handling practices.
- 5) Do not use if the product or packaging appears to be damaged.
- 6) Follow standard precautions. All patient specimens should be considered potentially infectious and handled accordingly.
- 7) Handle all specimens as if infectious using safe laboratory procedures. Dispose of hazardous or biologically contaminated materials according to the practices of your institution.
- 8) Avoid cross-contamination of samples by using disposable tips and changing them after each sample.
- 9) Do not mix reagents of different batches. Please use the product within the validity period.
- 10) Do not eat, drink, smoke, apply cosmetics or handle contact lenses in areas where reagents and human specimens are handled.
- 11) Results should be interpreted by a trained professional in conjunction with the patient's history and clinical signs and symptoms, and epidemiological risk factors.
- 12) Ensure laboratory equipment is calibrated and maintained in accordance with the laboratory's procedure.
- 13) When test results are transmitted from the laboratory to an informatics centre, attention has to be done to avoid erroneous data transfer.

## DISPOSAL OF WASTE

Disposal of waste must be carried out according to national and local regulations in force.

## BIBLIOGRAPHY

See the references at the end of this document.

## TABLE OF SYMBOLS

See the table of symbols at the end of this document.

## ORDER INFORMATION

Product	Packaging	Ref.
VP (KOH) Reagent Droppers	10 x 2.5 ml 10 x 2.5 ml	87007

## Revision History

Revision	Release Date	Change Summary
5	2024-09-16	Added notice to report any malfunction, defect or incident.
4	2023-05-15	Updated layout and content in compliance with IVDR 2017/746
3	2022-05-25	Updated: Kit Content, Table of Symbols

In case of malfunctions or defects, contact immediately Liofilchem (\*) or the local representative.

In case of incident associated with the device, notify immediately Liofilchem (\*) or its local representative and the National Competent Authority.

\*Please login to <https://www.liofilchemstore.it/login.php> (user ID and password required) and click on Complaint.

This IFU document and the SDS are available from the online Support Center:

[liofilchem.com/ifu-sds](https://www.liofilchem.com/ifu-sds)