

Kovac's Reagent

Cat # MMS-M-E205

For the detection of microbial indole

Principles and uses:

Kovac's Reagent is a reagent used for the detection of microbial indole. Bacteria that possess the enzyme triptophanase are capable of cleaving and deaminating tryptophan with the production of indole. The indole test is based on the formation of a dark red dye when the indole liberated reacts with 4-dimethylaminobenzaldehyde. Indole production is an important characteristic in the identification of many microorganisms, especially E. coli (+) from other Enterobacteriaceae.

For the detection of indole, the microorganisms must be grown aerobically in a glucose-free environment with plenty of Tryptophan (Urea Indole Broth - Cat. MM-M-227-500; Peptone Water - Cat. MM-M-403-500; SIM Medium - Cat. MM-M-514-500; Tryptophan Culture Broth - Cat. MM-M-237-500; MIO Medium - Cat. MM-M-510-500; Indole Nitrate Medium - Cat. MM-M-504-500, Lauryl Sulfate Chromogenic Broth Cat. MM-M-465-500, etc.). Peptone water is particularly suitable as a substrate in the study of indole production.

A positive reaction is denoted by the appearance of a pink-red color on the top of the tube. Negative reactions remain colorless or lightly yellow.

Formula per Litre:

4-Dimethylaminobenzaldehyde	50g	Hydrochloric acid 37%	250ml
1-Butanol	750ml		

Instructions for use:

- Lightly inoculate the medium substrate with the microorganism to analyze.
- Incubate 24-48 hours at 35°C.
- Add 4-5 drops of Kovac's Reagent to the tube and shake gently.

Quality control:

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Liquid	N/A	N/A	N/A

Microbiological test:

Incubation conditions: (35 °C / 24-48 h / anaerobic atmosphere).

Microorganisms

Characteristic reaction

Salmonella typhimurium ATCC 14028

Indol (-)

Escherichia coli ATCC 25922

Indole (+), Pink-red color

Storage:

Temperature: 2°C – 8°C

Bibliography:

N. Kovacs, Eine vereinfachte Methode zum Nachweis der Indolbildung durch Bakterien., Z. Immunitats. Forsch. Exp. Ther., 55, 311 (1928).

Isenberg, H.D. Clinical Microbiology Procedures Handbook, Vol. I, II, & III. American Society for Microbiology, Washington, D.C.

H.H. Gadebusch, S. Gabriels, Modified Stable Kovacs's Reagent for detection of Indol., Am. J. Cli. Pathol., 26, 1373 (1956).