

Salmonella HiVeg™ Agar, ONOZ

MV573

Intended Use:

Recommended for selective isolation and identification of *Salmonellae* from various specimens.

Composition**

Ingredients	g / L
HiVeg™ peptone	8.625
Yeast extract	3.000
HiVeg™ extract No. 1	6.000
Lactose	11.500
Sucrose	13.000
Synthetic detergent no. 1	2.000
Trisodium citrate, pentahydrate	9.300
Sodium thiosulphate pentahydrate	4.250
L-Phenylalanine	5.000
Disodium hydrogen phosphate dihydrate	1.000
Ferric citrate	0.500
Magnesium sulphate	0.400
Brilliant green	0.00166
Neutral red	0.022
Aniline blue	0.250
Metachrome yellow	0.470
Agar	15.000
Final pH (at 25°C)	7.1±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 76.15 grams (the equivalent weight of dehydrated medium per litre) in 1000 ml purified/distilled water. Heat to boiling to dissolve the medium completely. **DO NOT AUTOCLAVE**. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Salmonella and *Shigella* are gram-negative, facultatively anaerobic, non-sporulating rods in the family *Enterobacteriaceae*. They are widely distributed in animals. Salmonella Agar, ONOZ was developed by öNöZ (4) for rapid detection of *Salmonella* and *Shigella* species from clinical specimens.

Salmonella HiVeg™ Agar, ONOZ is prepared by completely replacing animal based peptone with vegetable peptones to avoid BSE/TSE risks associate with animal peptones. HiVeg™ peptone, yeast extract and HiVeg™ extract No. 1 provide nitrogenous compounds, vitamin B complex and other essential growth nutrients. Lactose and sucrose are the fermentable carbohydrates. Synthetic detergent no. 1, brilliant green and sodium citrate inhibit gram-positive organisms. Sodium thiosulphate and ferric citrate enable the detection of hydrogen sulphide production indicated by colonies with black centers. Lactose and sucrose fermenting members of *Enterobacteriaceae* are partially inhibited, and their colonies can be differentiated by means of the colour produced in the presence of the indicators -neutral red and aniline blue.

Proteus species deaminate phenylalanine to give phenylpyruvate, which forms a dark brown complex with iron ions. Phenylalanine also neutralizes chloramphenicol, which aids in the detection of *Salmonella* from patients under treatment.

Type of specimen

Clinical: Faeces, Urine; Water samples and Food samples

Specimen Collection and Handling

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (2). For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (3). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. The medium is selective for *Salmonella* and may not support the growth of other microorganisms.
2. Due to nutritional variations, some strains may show poor growth.
3. Final confirmation of suspected colonies must be carried out by serological and biochemical tests.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Beige to light brown homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Greenish brown coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 8.03% w/v aqueous solution at 25°C. pH : 7.1±0.2

pH

6.90-7.30

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony	Colour change of medium
# <i>Klebsiella aerogenes</i> ATCC 13048 (00175*)	50-100	good-luxuriant	≥50%	bluish or yellowish	yellow
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	good	40-50%	blue with bile precipitation	blue
<i>Klebsiella pneumoniae</i> ATCC 13883 (00097*)	50-100	poor-fair	20-30%	bluish-purple, may have slight precipitation ring around colony	bluish green
<i>Proteus mirabilis</i> ATCC 25933	50-100	good-luxuriant	≥50%	dark brown to black	dark yellow
<i>Pseudomonas aeruginosa</i> ATCC 27853 (00025*)	50-100	good-luxuriant	≥50%	yellow to brown	yellow
<i>Salmonella</i> Typhi ATCC 6539	50-100	good-luxuriant	≥50%	yellow with or without black centres	yellow
<i>Salmonella</i> Typhimurium ATCC 14028 (00031*)	50-100	good-luxuriant	≥50%	yellow with black centres	yellow
<i>Shigella flexneri</i> ATCC 12022 (00126*)	50-100	good-luxuriant	≥50%	yellow to brown	dark brown
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	≥10 ⁴	inhibited	0%		

Key : (*) Corresponding WDCM numbers. (#) Formerly known as *Enterobacter aerogenes*

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (4,5).

Reference

1. öNöz E., Hoffmann K., 1978, Zbl. Bakt. Hyg., I. Abt. Orig., A240:16.
2. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
3. Lipps WC, Braun-Howland EB, Baxter TE, eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.
4. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
5. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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Disclaimer :

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