

Vogel Johnson Agar (VJ Agar)

Art. No. 01-206

Also known as

Tellurite-Glycine-Phenol Red Agar Base

Specification

Solid and selective medium for isolation and identification of staphylococci according to ISO standard 22718.

Formula* in g/L

Casein peptone.....	10,000
Yeast extract.....	5,000
Mannitol.....	10,000
Dipotassium phosphate.....	5,000
Lithium chloride.....	5,000
Glycine.....	10,000
Phenol red.....	0,025
Agar.....	15,000
Final pH 7,2 ± 0,2 at 25°C	

* Adjusted and /or supplemented as required to meet performance criteria

Directions

Suspend 60 g of powder in 1 L of distilled water and bring to the boil. Dispense in suitable containers and sterilize at 121°C for 15 minutes. Cool it to 50°C approx. and add aseptically 20 mL of Potassium Tellurite Solution 1% (Art. No. 06-089) or 6,0 mL of Potassium Tellurite Solution 3.5% (Art. No. 06-011). **Do not reheat** after tellurite addition.

Description

VJ Agar is a selective medium for detection and enumeration of pathogenic staphylococci. The medium's strong selective action is due to lithium chloride, glycine and potassium tellurite. They inhibit almost all accompanying organisms, while staphylococci are not affected. Staphylococci reduce tellurite to tellurium, producing black colonies. For pathogenic Staphylococci a high correlation between tellurite reduction and mannitol fermentation has been proven, and this is shown in the medium by the indicator turning to yellow due to the amount of acid produced.

The medium's selectivity avoids, in the first 24 hours, the development of any other bacteria, so heavy inoculation is permitted. After this period, it is possible that other bacteria may appear like micrococci, which produce tiny colonies, and staphylococci can ferment mannitol, therefore it is recommended to verify their identification separately.

Due to reduced tellurite, staphylococci generally appear as black colonies over red medium (if they do not ferment mannitol) or yellow medium (if they do, and these are a presumptive pathogen). Saprophytic staphylococci (*S. epidermidis*, *S. saprophiticus* and *S. intermedius*) have a grey-black colour and are mannitol negative. Complete medium may be stored up to 1 week in the refrigerator. Do not re-melt it after tellurite is added.

References

- ATLAS, R.M., L.C. PARKS (1993) Handbook of Microbiological Media. CRC Press, Inc. London.
- FDA (Food and Drug Administrations) (1998) Bacteriological Analytical Manual. 8th ed. Revision A. AOAC International. Gaithersburg. Md.
- ISO Norma 22718 (2006) Cosmetics. Detection of *Staphylococcus aureus*.
- ISO/TS 11133-1: 2009. Microbiology of food and animal feeding stuffs.- Guidelines on preparation and production of culture media. Part 1: General guidelines on quality assurance for the preparation of culture media in the laboratory.
- ISO/TS 11133-2: 2003 Corr. 2004. Microbiology of food and animal feeding stuffs.- Guidelines on preparation and production of culture media. Part 2: Practical guidelines on performance testing of culture media.
- USP (2002) 25th ed. <61> Microbial Limit Tests. US Pharmacopeial Convention Inc. Rockville. Md.
- VOGEL, R.A. y M. JOHNSON (1960) A modification of the tellurite-glycine medium for the use in the identification of *Staphylococcus aureus*. Pub. Health. Lab. 18:131-133.

Storage

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4°C to 30°C and <60% RH).

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Quality control

Incubation temperature: 35°C ± 2,0

Incubation time: 24 - 48 h

Inoculum: 10-100 CFU (Productivity) // 1.000-10.000 CFU (Selectivity). Spiral Plate Method (ISO/TS 11133-1/2)

Microorganism	Growth	Remarks
<i>Escherichia coli</i> ATCC 25922	Inhibited	Selectivity
<i>Bacillus subtilis</i> ATCC 6633	Inhibited	Selectivity
<i>Staphylococcus epidermidis</i> ATCC 12228	Fair to good	Brownish. Punctiform colonies
<i>Staphylococcus aureus</i> ATCC 6538	Productivity 0.50	Black colonies; Yellow medium
<i>Staphylococcus aureus</i> ATCC 25923	Productivity > 0.50	Black colonies; Yellow medium