

70182 Antibiotic Agar No 2 (Penassay Base Agar; Grove and Randall Antibiotic Agar No. 2)

Used in antibiotic assay work (USP, FDA, Ph. Eur.) according to Grove & Randall; recommended as a base layer in the cylinder assay of e.g. penicillin and aureomycin, for the plate assay and the turbidimetric assay of bacitracin.

Composition:

Ingredients	Grams/Litre
Peptone (from meat)	6.0
Yeast extract	3.0
Meat extract	1.5
Agar	15.0
Final pH 6.5 +/- 0.2 at 25°C	

Store dehydrated powder, in a dry place, in tightly-sealed containers at 10-30°C.

Appearance: Faintly yellow to faint beige to faint brown colored, homogeneous, free flowing powder.
 Colour and Clarity: Light yellow to light brown colored, clear to very hazy gel forms in petri plates.

Directions:

Suspend 25.5 g in 1 litre of distilled water, heat to boiling to dissolve the medium completely. Sterilize in the autoclave at 121°C for 15 minutes.

Principle and Interpretation:

This medium is commonly used as base agar for microbiological agar diffusion assays for wide variety of antibiotics. Agar diffusion assays can be performed by cylinders, punched-hole or paper disc tests. This medium is based on the formulation proposed by Grove and Randall (1).

Peptone, yeast and meat extract provide the nitrogenous and carbonaceous compounds, long chain amino acids, vitamins and mineral requirement for the growth of test organisms. It is a solid medium for the growth of organisms and works well for the over layering by soft agar.

To perform the antibiotic assay the Antibiotic Agar No 2 is used as Base Agar. This medium should be prepared on the same day as the test. For the cylinder method, a base layer of 21 ml is required. Once the base medium has solidified, Antibiotic Agar No 1 as seed agar, inoculated with the standardized culture can be overlaid. Even distribution of the layer is important.

Cultural characteristics after 18-48 hours at 35-37°C

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery
<i>Bacillus subtilis</i> subsp. <i>spizizenii</i> (6633 = WDCM 00003)	50-100	+++	≥70%
<i>Micrococcus luteus</i> (10240)	50-100	+++	≥70%
<i>Staphylococcus aureus</i> (9144 = WDCM 00035)	50-100	+++	≥70%
<i>Staphylococcus aureus</i> (29737)	50-100	+++	≥70%
<i>Staphylococcus epidermidis</i> (12228 = WDCM 00036)	50-100	++/+++	≥70%
<i>Klebsiella pneumoniae</i> (10031)	50-100	+++	≥70%
<i>Enterococcus hirae</i> (10541 = WDCM 00011)	50-100	+++	≥70%
<i>Escherichia coli</i> (10536)	50-100	+++	≥70%



References:

1. Grove, D.C., and W.A. RANDALL: Assay methods of antibiotics, Antibiotics monographs 2, Medical encyclopedia. New York (1955)
2. Indian Pharmacopoeia Ministry of Health and Family Welfare, Govt. of India, Delhi (2018)
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition
4. Jorgensen, J.H., Pfaller, M.A., Carrol , K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. Manual of Clinical Microbiology, 11th Edition. Vol. 1. (2015)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

