Eugon Agar

Intended Use
Eugon Agar is a general-purpose medium used for cultivating a wide variety of microorganisms.

Summary and Explanation
Eugon Agar is prepared according to the formula described by Pelczar and Vera.[1] Eugon Agar and Eugon Broth were developed to obtain eugonic (luxuriant) growth of fastidious microorganisms.[2] Eugon Agar can be used with or without enrichment. Enriched with blood, Eugon Agar supports the growth of pathogenic fungi including *Nocardia*, *Histoplasma* and *Blastomyces*. With the addition of Supplement B, excellent growth of *Neisseria*, *Francisella* and *Brucella* is achieved. The unenriched medium supports rapid growth of lactobacilli associated with cured meat products, dairy products and other foods.

Niven[3] reported the use of Eugon Agar for the detection of lactic acid in cured meats, and recommended it for investigating spoilage in meats. Harrison and Hansen[4] employed the medium for plate counts of the intestinal flora of turkeys. Frank[5] showed its usefulness in germinating anaerobic spores pasteurized at 104°C.

Eugon Agar is included in the *Compendium of Methods for the Microbiological Examination of Foods*.[6]

User Quality Control

Identity Specifications
Difco™ Eugon Agar

Dehydrated Appearance:	Beige, free-flowing, homogeneous.
Solution:	4.54% solution, soluble in purified water upon boiling. Solution is light amber, very slightly to slightly opalescent, cystine precipitate may be visible.
Prepared Appearance:	Light amber, slightly opalescent, cystine precipitate may be visible.
Reaction of 4.54% Solution at 25°C:	pH 7.0 ± 0.2

Cultural Response
Difco™ Eugon Agar

Prepare the medium (unsupplemented) per label directions. For *Candida albicans* and *Aspergillus brasiliensis* inoculate using fresh broth cultures and incubate at 30 ± 2°C for 18-48 hours. For all other cultures inoculate and incubate at 35 ± 2°C for 18-48 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY
Aspergillus brasiliensis (niger)	16404	Fresh	Fair to good
Candida albicans	26790	Fresh	Good
Lactobacillus fermentum	9338	30-300	Good
Shigella flexneri	12022	30-300	Good
Streptococcus pyogenes	19615	30-300	Good

Principles of the Procedure
Peptones provide the nitrogen, vitamins and amino acids in Eugon Agar. The high concentration of dextrose is the energy source for rapid growth of bacteria. L-Cystine and sodium sulfite are added to stimulate growth. Sodium chloride maintains the osmotic balance of the media. The high carbohydrate content along with high sulfur (cystine) content improves growth with chromogenicity.[2] Agar is the solidifying agent in Eugon Agar.

Formula
Difco™ Eugon Agar

Approximate Formula* Per Liter		
Proteose Peptone No. 3	7.5	g
Pancreatic Digest of Casein	7.5	g
Soy Peptone	5.0	g
Dextrose	5.5	g
L-Cystine	0.7	g
Sodium Chloride	4.0	g
Sodium Sulfite	0.2	g
Agar	15.0	g

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

Directions for Preparation from Dehydrated Product
1. Suspend 45.4 g of the powder in 1 L of purified water. Mix thoroughly.
2. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder.
3. Autoclave at 121°C for 15 minutes.
4. When an enrichment is being prepared, cool to 50-55°C prior to adding the desired enrichment.
5. Test samples of the finished product for performance using stable, typical control cultures.

Procedure
For a complete discussion on bacteria and fungi from clinical specimens, refer to the appropriate procedures outlined in the references.[7,8] For the examination of bacteria and fungi in food refer to standard methods.[6,9]

Expected Results
Refer to appropriate references and procedures for results.

Limitations of the Procedure
1. Eugon Agar is not recommended as a blood agar base for hemolytic reactions because of its high sugar content.
2. It is suggested that Eugon Agar be prepared as required. Do not melt and resolidify media containing enrichments.

References

1. Pelczar and Vera. 1949. Milk Plant Monthly *38*:30.
2. MacFaddin. 1985. Media for isolation-cultivation-identification-maintenance of medical bacteria, vol. 1. Williams & Wilkins, Baltimore, Md.
3. Niven. 1949. J. Bacteriol. *58*:633.
4. Harrison and Hansen. 1950. J. Bacteriol. *59*:197.
5. Frank. 1955. J. Bacteriol. *70*:269.
6. Downes and Ito (ed.). 2001. Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C.
7. Isenberg and Garcia (ed.). 2004 (update, 2007). Clinical microbiology procedures handbook, 2nd ed. American Society for Microbiology, Washington, D.C.
8. Murray, Baron, Jorgensen, Landry and Pfaller (ed.). 2007. Manual of clinical microbiology, 9th ed. American Society for Microbiology, Washington, D.C.
9. U.S. Food and Drug Administration. 2001. Bacteriological analytical manual, online. AOAC International, Gaithersburg, Md.

Availability

Difco™ Eugon Agar

COMPF

Cat. No. 258910 Dehydrated – 500 g

Difco™ Supplement B

Cat. No. 227610 Lyophilized – 6 × 10 mL with Reconstituting Fluid*
227620 Lyophilized – 100 mL with Reconstituting Fluid*

**Store at 2-8°C.*