AMES' MEDIUM
With L-Glutamine, Without Sodium Bicarbonate
Product Number **A1420**

Product Description
Ames' Medium was formulated to support retinal tissue in relatively short-term culture (Ames and Nesbett, 1981). Rabbit retina incubated in Ames' Medium for more than 2 days maintained its metabolism and electrical responses to photic stimuli. Today, this mixture remains the medium of choice for maintaining central nervous system tissue in vitro.

Components	g/L
Calcium Chloride Anhydrous	0.1275
Magnesium Sulfate	0.1488
Potassium Chloride	0.231
Potassium Phosphate Monobasic(anhydrous)	0.068
Sodium Chloride	7.01
L-Alanine	0.0024
L-Arginine•HCl	0.00421
L-Asparagine (anhydrous)	0.00084
L-Aspartic Acid	0.00012
L-Cystine•2HCl	0.000065
L-Glutamine	0.073
L-Glutamic Acid•Na	0.001183
Glycine	0.00045
L-Histidine•HCl• H_2O	0.002513
L-Isoleucine	0.00058
L-Leucine	0.00144
L-Lysine•HCl	0.003648
L-Methionine	0.00039
L-Phenylalanine	0.00132
L-Proline	0.00007
L-Serine	0.00252
Taurine	0.00075
L-Threonine	0.00333
L-Tryptophan	0.00049
L-Tyrosine•2Na•2H_2O	0.00211
L-Valine	0.00176
Ascorbic Acid•Na	0.01796
D-Biotin	0.0001
Choline Chloride	0.0007
Folic Acid	0.0001
myo-Inositol	0.0272
Niacinamide	0.0001
D-Pantothenic Acid (hemicalcium)	0.0001
Pyridoxal•HCl	0.0001
Riboflavin	0.00001
Thiamine•HCl	0.0001
Cytidine	0.00073
D-Glucose	1.081
Hypoxanthine	0.00082
Pyruvic Acid•Na	0.01333
Thymidine	0.00024
Uridine	0.00073

Precautions and Disclaimer
REAGENT
For R&D use only. Not for drug, household or other uses.

Preparation Instructions
Powdered media are hygroscopic and should be protected from moisture. The entire contents of each package should be used after opening. Preparing a concentrated solution of medium is not recommended as precipitates may form. Supplements can be added prior to filtration or introduced aseptically to sterile medium.

1. Measure out 90% of final required volume of water. Water temperature should be 15-20°C.
2. Gas the water with 100% CO_2. While gently stirring the water, add 1.9 g of sodium bicarbonate or 25.3 ml of sodium bicarbonate solution [7.5% w/v] for each liter of medium.
3. Add the powdered medium to the sodium bicarbonate and water mixture. Stir until dissolved. Do NOT heat water.
4. Rinse original package with a small amount of water to remove all traces of powder. Add to solution in step 3.
5. Add additional water to bring the solution to final volume.
6. Sterilize immediately by filtration using a membrane with a porosity of 0.22 microns. Positive pressure filtration will reduce CO_2 loss.
7. The medium is designed to provide a physiological pH when equilibrated with 5% CO_2 at 37 °C. The pH can be adjusted under these conditions using 1N HCL or 1N NaOH. High CO_2 is used during preparation to avoid precipitation of $CaCO_3$.

Storage and Stability
Store the dry powdered medium at 2-8 °C under dry conditions and liquid medium at 2-8 °C in the dark. Deterioration of the powdered medium may be recognized by any or all of the following: [1] color change, [2] granulation/clumping, [3] insolubility. Deterioration of the liquid medium may be recognized by any or all of the following: [1] pH change, [2] precipitate or particulates, [3] cloudy appearance [4] color change. The nature of supplements added may affect storage conditions and shelf life of the medium. Product label bears expiration date.

Procedure
MATERIALS REQUIRED BUT NOT PROVIDED;
Water for tissue culture [W3500]
Sodium Bicarbonate [S5761] or
Sodium Bicarbonate Solution, 7.5% [S8761]
1N Hydrochloric Acid [H9892]
1N Sodium Hydroxide [S2770]
Medium additives as required

Reference(s)

1. Ames, A. and Nesbett, F. (1981). In Vitro Retina as an Experimental Model of the Central Nervous System. J. Neurochem. 37:867.

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