

Product Information

IPL-41 Insect Medium Modified

with 6.8 mM L-glutamine, without calcium chloride, without sodium bicarbonate

CATALOG NO. 56923C

Description

IPL-41 Insect Medium was developed by a group from the United States Department of Agriculture (USDA) Insect Pathology Laboratory as a modification of Goodwin's original IPL formulation¹. It was designed for the growth of cells from lepidopteran species, specifically the fall army worm, *Spodoptera frugiperda*, and for the production of baculovirus.

Formulation

Component (all components measured in mg/L)	
INORGANIC SALTS	
Ammonium molybdate tetrahydrate	0.040
Cobalt chloride hexahydrate	0.050
Cupric chloride dihydrate	0.200
Ferrous sulfate heptahydrate	0.550
Magnesium sulfate anhydrous	918.200
Manganese chloride tetrahydrate	0.020
Potassium chloride	1200.000
Sodium chloride	3000.000
Sodium phosphate monobasic monohydrate	1160.000
Zinc chloride	0.040
VITAMINS	
Biotin	0.160
D-calcium pantothenate	0.008
Choline chloride	20.000
Cyanocobalamin	0.240
Folic acid	0.080
Myo-inositol	0.400
Niacin	0.160
PABA	0.320
Pyridoxine HCl	0.400
Riboflavin	0.080
Thiamine HCl	0.080

Component, continued (all components measured in mg/L)	
AMINO ACIDS	
β-alanine	300.000
L-arginine HCl	800.000
L-asparagine monohydrate	1477.000
L-aspartic acid	1300.000
L-cystine 2HCl	130.300
L-glutamic acid	1500.000
L-glutamine	1000.000
Glycine	200.000
L-histidine free base	200.000
Hydroxy L-proline	800.000
L-isoleucine	750.000
L-leucine	250.000
L-lysine HCl	700.000
L-methionine	1000.000
L-phenylalanine	1000.000
L-proline	500.000
DL-serine	400.000
L-threonine	200.000
L-tryptophan	100.000
L-tyrosine 2Na dihydrate	363.200
L-valine	500.000
OTHER	
Dextrose anhydrous	2500.000
Fumaric acid	4.400
α-Ketoglutaric acid	29.600
L-malic acid	53.600
Maltose monohydrate ultra	1000.000
Succinic acid free acid	4.800
D+Sucrose	16500.000
ADD: Calcium chloride dihydrate	662.310
ADD: Sodium bicarbonate	350.000
Grams of powder per liter	39.864

Precautions

Use aseptic technique when handling or supplementing this medium after filtration. This product is for further manufacturing use. THIS PRODUCT IS NOT INTENDED FOR HUMAN OR THERAPEUTIC USE.

Storage

Store dry powder medium at 2 to 8 C. Do not use after the expiration date. Store hydrated medium protected from light at 2 to 8 C.

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Indications of Deterioration

Dry powder medium should be free flowing. Do not use if powder is caked. Prepared medium should be clear of particulates and flocculent material. Do not use if liquid medium is cloudy or contains precipitate. Other evidence of deterioration may include color change or degradation of physical or performance characteristics.

Preparation Instructions

1. Measure 80 - 90% of the final volume of cell culture grade water (Catalog No. 59900C) into an appropriate size mixing vessel. Water temperature should be 20 to 30 C. Do not heat water.
2. Add the dry powder medium to the water. Rinse the original package with a small amount of cell culture grade water to remove all traces of powder and add to the solution. Mix until completely dissolved.
3. For each liter being prepared, add 350.00 mg/L of sodium bicarbonate (Catalog No. 90421C) or 4.7 mL/L of sodium bicarbonate solution 7.5% (Catalog No. 59221C). Mix until completely dissolved.
4. For calcium supplementation prepare a 20% calcium chloride stock solution by dissolving 10.0 g of calcium chloride dihydrate (CaCl₂ 2H₂O) in 40.0 mL of cell culture grade water.

NOTE: The reaction is exothermic.

QS the solution to a final volume of 50.0 mL. Mix until completely dissolved. For each liter of medium being prepared, add 3.31 mL of the stock solution to achieve the required amount (662.31 mg/L) of calcium chloride. SAFC Biosciences recommends adding the pre-dissolved calcium chloride to the medium prior to adjusting the pH as directed in step 5 below.

5. While stirring the solution in Step 3, adjust the pH to 6.2 using KOH 1N. Use of NaOH may cause precipitation.
6. Add cell culture grade water to the solution in Step 4 to bring it to the final volume. Keep the vessel closed until the solution is filtered to avoid fluctuations in pH.
7. The osmolality of this medium should be raised to 360 mOsm by adding approximately 2.8 g/L NaCl.
8. Sterilize the solution using a membrane filter with a pore size of 0.22 µm or less. A peristaltic pump or an inert gas such as nitrogen can be used to provide positive pressure at 3 - 15 psi. Do not use CO₂ gas.
9. Sterile solutions should be dispensed aseptically into sterile containers. Store protected from light at 2 to 8 C.

10. Supplements, such as antibiotics, can be added to the sterilized solution using aseptic technique. Storage conditions and shelf life of the supplemented product may be affected by the nature of the supplements. Sterile serum should not be refiltered before or after being added to sterile medium because growth promoting capacity may be reduced upon refiltration.

NOTE: Dry powder medium is extremely hygroscopic and must be protected from atmospheric moisture. We recommend that the entire contents of each package be used immediately after opening.

Characteristics

Appearance

Off-white free-flowing powder

Bioburden

≤ 100 CFU/100 mL

Endotoxin

≤ 1.0 EU/mL

Osmolality (as supplied)

300 - 340 mOsm/kg H₂O

pH (as supplied)

3.5 - 3.9

References

1. Goodwin, R. H., and Adams, J. R., *In Vitro* (1978) 14:351.

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