GIBCO™
Invitrogen Corporation

Murashige and Skoog Complete Medium
50X Concentrate

Cat. No. 10494 KIT
Contains:
Cat. No. 10505 400 mL 50X Concentrate Salts I
Cat. No. 10506 400 mL 50X Concentrate Salts II
Cat. No. 10504 400 mL 50X Concentrate Acid Solubles

Storage Conditions: All components should be stored at 2 to 8°C, in the dark.

Intended Use
This medium is intended for use in plant tissue culture. Murashige and Skoog Medium is widely used for many plant tissue culture applications.

Product Description
Murashige and Skoog Complete Medium-50X Concentrate, Cat. No. 10494, is composed of three membrane-filtered, aseptically processed, concentrated solutions. When reconstituted with distilled water, they yield a fully diluted, single strength (1X) medium, that requires no adjustment of pH or osmolality. The reconstituted (1X) medium prepared from 50X concentrate will exhibit biochemical potency, pH and osmolality comparable to Murashige and Skoog Complete Medium reconstituted from powder.[1] The 1X medium prepared from 50X concentrate requires no additional supplementation, and is comparable to Murashige and Skoog Salt Mixture (GIBCO Cat. No. 11117) with supplementation (0.1 mg/L thiamine•HCl, 100 mg/L myoinositol, 0.5 mg/L pyridoxine•HCl, 30,000 mg/L sucrose, and 500 mg/L MES).

Reconstitution Instructions for a 1X Medium
The concentrated solutions must be added to distilled water in the order listed below to yield one liter of a fully diluted, single strength (1X) medium that does not require adjustment of pH or osmolality. Membrane filtration is optional when (1X) medium is prepared with sterile distilled water in an aseptic environment. Membrane filtration is required when utilizing non-aseptic procedures. Distilled water (Cat. No. 15230) may be purchased from GIBCO. **(Autoclaving 1X medium or concentrated components is not recommended.)**

Directions for making 1 Liter:

STEP 1 Add 940.0 mL sterile distilled water to 1 Liter vessel.

STEP 2 Add 20.0 mL 50X Salts I Solution, with mixing, to the 1 Liter vessel. Do not adjust pH.

STEP 3 Add 20.0 mL 50X Salts II Solution, with mixing, to the 1 Liter vessel. Do not adjust pH.

STEP 4 Add 20.0 mL 50X Acid Soluble Solution, with mixing, to the 1 Liter vessel. Do not adjust pH.

STEP 5 Process immediately into sterile containers by membrane filtration using a 0.2 micron filter. A positive-pressure system is recommended. (Membrane filtration optional if prepared under aseptic conditions using sterile distilled water.)

STEP 6 Store at 2 to 8°C, in the dark. Avoid prolonged exposure to light.

Instructions for Use
Prior to use, warm the 1X culture medium to 15 to 30°C.

Formulation [2]	**Powder**
Component	**mg/L**
NH_4NO_3	1,650.00
H_3BO_3	6.20
$CaCl_2$	332.20
$CoCl_2$	0.025
$CuSO_4 \cdot 6H_2O$	0.025
Na_2EDTA	37.26
$FeSO_4 \cdot 7H_2O$	27.80
$MgSO_4$	180.70
$MnSo_4 \cdot H_2O$	16.90
$Na_2MoO_4 \cdot 2H_2O$	0.25
KI	0.83
KNO_3	1,900.00
KH_2PO_4	170.00
$ZnSO_4 \cdot H2O$	8.60
VITAMINS:	
myo-Inositol	100.00
Nicotene Acid	0.50
Pyridoxine·HCl	0.50
Thiamine·HCl	0.10
OTHER COMPONENTS:	
Glycine (Free Base)	2.00
MES	500.00
Sucrose	30,000.00

References:
[1] Lin, J.J., Fike,R.M., and Assad-Garcia. In Vitro Cellular and Developmental Biology-Plant. In press (1995).
[2] Murashige, T. and Skoog, F. *Physiol. Plant* **15**, 485 (1962).

For further information on this or other GIBCO ™ products, contact Technical Services at the following:

United States TECH-LINE SM : 1 800 955 6288
Canada TECH-LINE: 1 800 757 8257

Outside the U.S. and Canada, refer to the GIBCO products catalogue for the TECH-LINE in your region.

You may also contact your Invitrogen Sales Representative or our World Wide Web site at www.invitrogen.com.

For research use only.
CAUTION: Not intended for human or animal diagnostic or therapeutic uses.

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