Product Information Sheet

L689
Linsmaier & Skoog Basal Medium

Synonym: Murashige & Skoog (MS) Medium with Minimal Organics (MSMO)

Properties

Form:	Powder
Appearance:	White to Yellow Powder
Application:	Plant Tissue Culture
Solubility:	Water
Typical Working Concentration:	4.43 g/L
Storage Temp:	2 – 6° C
Storage Temp of Stock Solution:	Preparation of concentrated solutions is not recommended as insoluble precipitates may form.
Other Notes:	Contains the macro- and micronutrients and vitamins as described by Linsmaier and Skoog (1965). pH = 3.5 – 4.5

Formula (mg/L)

Ammonium Nitrate	1650
Boric Acid	6.2
Calcium Chloride, Anhydrous	332.2
Cobalt Chloride•$6H_2O$	0.025
Cupric Sulfate•$5H_2O$	0.025
Na_2 EDTA ·$2H_2O$	37.26
Ferrous Sulfate•$7H_2O$	27.8
Magnesium Sulfate	180.7
Manganese Sulfate•H_2O	16.9

Molybdic Acid (Sodium Salt)•$2H_2O$	0.25
Potassium Iodide	0.83
Potassium Nitrate	1900
Potassium Phosphate, Monobasic	170
Zinc Sulfate•$7H_2O$	8.6
myo-Inositol	100
Thiamine•HCl	0.4

Application Notes

Plant Tissue Culture Tested
Plant species: Originally tobacco; since then many other species
This medium is the standard Murashige & Skoog (MS) basal salts supplemented with Linsmaier and Skoog vitamins.
This medium is a subsequent optimization of the medium developed by Murashige and Skoog. Linsmaier's research on the optimization of vitamins first described by Murashige as essential. Linsmaier found that certain vitamins were not essential when Thiamine•HCl was optimized

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from 0.1 to 0.4 mg/L. Linsmaier also noted that Folic acid, p-Aminobenzoic Acid, L-Glutamine, and Ascorbic Acid all had a positive influence on the growth of Nicotiana callus but was not as essential as Thiamine•HCI and myo-Inositol.

References

Linsmaier, EM and F Skoog. 1965. Organic growth factor requirements of tobacco tissue culture. Physiol. Plant. 18:100-127.

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