LB Broth - Auto Induction Medium

#GCM17.0500

(for research only)

Formulation (g/L)

Tryptone:	10,00	Yeast Extract:	5,00
$MgSO_4$:	0,15	$(NH_4)_2SO_4$:	3,30
KH_2PO_4:	6,80	Na_2HPO_4:	7,10
Glucose	0,50	Alpha Lactose	2,00
Final pH (25ºC):	7,0 ± 0,2		

Product: Dehydrated powder for the preparation of LB Broth w/o trace elements, supplemented with glucose and alpha lactose for the auto induction of protein expression under the control of IPTG-inducible promoters in *Escherichia coli.*

Quantity: 500g

Appearance: Beige powder. Autoclaved medium should be amber.

Storage: 2ºC – 25ºC. When not in use, keep container closed to avoid hydration.

Preparation:

Add 34,85g of the dehydrated medium to one liter of distilled water. Mix well and dissolve by heating with regular agitation. Boil for 1 minute in order to dissolve completely. Dispense in appropriate containers and sterilize by autoclaving at 121ºC for 15 to 20 minutes. Store at 2ºC to 8ºC.

Usage

Commonly, heterologous protein expression is carried out in bacterial systems where the expression is under the control of an IPTG-inducible promoter, such as the Lac promoter. Cells are grown until a desired density and protein expression is subsequently induced by adding IPTG to the medium. With this Auto Induction Medium (AIM), it is no longer required to monitor cell density and to add IPTG at the proper stage, as the medium contains an optimized ratio of glucose and alpha lactose as carbon sources. Glucose, who serves as a repressor of the Lac operon, by preventing uptake of alpha lactose (hence and IPTG) is metabolized preferentially during growth, promoting high cell density. Once glucose is depleted, usually in mid to late log phase, lactose enters the cell where it is converted by ß-galactosidase into allolactose, which in turn serves as the inducer of the IPTG-inducible promoter, resulting in protein expression. This is a great convenience and simplifies manual or automatic induction and analysis of multiple clones compared to conventional IPTG induction.

Bibliography

Studier (2005) Protein production by auto-induction in high-density shaking cultures. Protein Expr.Purif. 41: 207-234

ORDERING INFORMATION – Culture Media and Components

Reference #	Product Name	Quantity
GCM01.0500	LB Agar (Lennox)	500 g
GCM02.0500	LB Broth (Lennox)	500 g
GCM03.0500	Luria Agar (Miller´s LB Agar)	500 g
GCM04.0500	Luria Broth (Miller´s LB Broth)	500 g
GCM05.0500	Luria Agar (Miller´s Modification)	500 g
GCM06.0500	Luria Broth (Miller´s Modification)	500 g
GCM07.0500	Terrific Broth	500 g
GCM08.0500	Modified Terrific Broth	500 g
GCM09.0500	2xYT Medium	500 g
GCM10.0500	2xYT Agar	500 g
GCM11.0500	SOB Medium	500 g
GCM12.0500	SOC Medium	500 g
GCM13.0500	YPD Broth	500 g
GCM14.0500	YPD Agar	500 g
GCM15.0500	YNB w/o amino acids and w/o ammonium sulfate	500 g
GCM16.0500	YNB w/o amino acids with ammonium sulfate	500 g
GCM17.0500	LB Broth (Auto Induction Medium)	500 g
GCM18.0500	2xYT Broth (Auto Induction Medium)	500 g
GCM19.0500	Terrific Broth (Auto Induction Medium)	500 g
GCM20.0500	Super Broth (Auto Induction Medium)	500 g
GCM21.0500	Peptone	500 g
GCM22.0500	Bacterial Peptone	500 g
GCM23.0500	Tryptone	500 g
GCM24.0500	Yeast Extract	500 g
GCM25.0500	Bacteriological Agar	500 g
GCM26.0500	Dextrose	500 g
GCM27.0500	Sucrose	500 g

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