

IPTG Solution (Dioxane-Free)

Shipping: On Dry/Blue Ice

Catalog numbers

Exp. Date: See vial

BIO-37082 : 10ml

Batch No.: See vial

BIO-37083 : 5 x 10ml

Store at -20°C



DATA SHEET

Storage and stability: IPTG Solution is shipped on Dry/Blue Ice. It should be stored at -20°C upon receipt. Excessive freeze/thawing is not recommended. Store protected from light. When stored under optimum conditions, it is stable for up to 24 months from date of purchase.

Safety precautions: Harmful if swallowed. Irritating to eyes and skin. Please refer to the material safety data sheet for further information and safety handling practice.



Xi: IRRITANT

Notes:

For Research Use Only

This product insert is a declaration of analysis at the time of manufacture

Description

Isopropyl-β-D-thiogalactopyranoside (IPTG) is a chemical analogue of galactose, which cannot be hydrolysed by the enzyme β-Galactosidase. Hence, it induces the *E. coli lac* operon activity by binding and inhibiting the lac repressor without being degraded. Genes controlled by the *lac* or *tac* promoter/operator sequences are expressed to high levels in the presence of IPTG.

It is recommended for blue/white screening by *lacZ* α- complementation with appropriate vectors and host strains, such as alpha-select, CH3-Blue and BIOBlue cells, and for protein expression with BL21 (DE3) cells and other lac promoter-derived expression systems. The ultra-pure preparation is dioxane-free and supplied as a sterile aqueous solution.

Features

- Convenient ready-to-use solution
- Compatible with all commonly used *lacZ* expression systems
- Non-hazardous, non-toxic solution

Applications

- Ideal for blue/white color screening of bacterial colonies to distinguish bacterial or phage clones after transformation experiments

Kit components

Reagent	Concentration
IPTG Solution (in water)	1M Stock Solution (238mg/ml)

Characteristics

Empirical formula	C ₉ H ₁₈ O ₅ S
Molecular weight	238.3
Form	1M Solution in water
Melting point	112-113°C
Purity	≥99% by HPLC

Protocol

IPTG should be used at a final concentration of 250–350µg/ml in culture plates, top agar, or liquid culture. Alternatively, an appropriate amount of IPTG can be spread onto the surface of an agar plate and allowed to dry before inoculating with bacterial culture (1).

Reference:

1. Sambrook, J. and Russell, D.W. (2001) Molecular cloning: a laboratory manual, 3rd ed., Cold Spring Harbour Laboratory Press.

Associated Products

Product Name	Pack Size	Catalog No.
X-GAL Powder	1g	BIO-37035
IPTG Powder	5g	BIO-37036
Quick-Stick Ligase	50 reactions	BIO-27027
SureClean	5ml	BIO-37042
α-Select Gold Efficiency Competent	1ml	BIO-85027
CH3-Blue 10 ⁹ Chemically Competent Cells	1ml	BIO-85040
BioBlue 10 ⁹ Chemically Competent	1ml	BIO-85037
BL21 (DE3) Competent Cells	1ml	BIO-85032

Product Citations:

1. Ali, F.R., et al. *Meth. Mol. Biol.* **628**, 195-214 (2010).
2. Prabhakar, V., et al. *FEBS Lett.* **583(6)**, 983-991 (2009).
3. Chan, C-H., et al. *Conserv. Gen.* **9(4)**, 1067-1070 (2008).
4. Hamblin, K., et al. *Mol. Microbiol.* **68(6)**, 1395-1405 (2008).
5. Maruta, F., et al. *J. Drug Targeting* **15(4)**, 311-319 (2007).
6. Ross, P.J., et al. *Infect. Immun.* **72(3)**, 1568-1579 (2004).
7. Meng, G. & Fütterer, K. *Nat. Struct. Biol.* **10**, 935-941 (2003).

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