

# IPTG (Dioxane-Free)

Shipping: On Dry/Blue Ice      Catalog numbers  
Exp. Date: See vial              BIO-37036 : 5g  
Batch No.: See vial

Store at -20°C

DATA SHEET



**Storage and stability:** IPTG 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- $\beta$ -D-thiogalactopyranoside (IPTG) is a chemical analogue of galactose, which cannot be hydrolysed by the enzyme  $\beta$ -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*  $\alpha$ - 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

- Induces *E. coli lac* operon activity
- >99.6% purity by HPLC
- Available as powder and stabilized stock solution

## Applications

- Blue/white color screening
- Induction of *lac* operon for protein expression
- Genes controlled by the *lac* or *tac* promoter/operator sequences are expressed to high levels in the presence of IPTG

## Characteristics

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

## Recommendations for use

- Dissolve to desired concentration in Water, 18.2M $\Omega$  (DNase/RNase-free).
- Filter sterilize through a 0.22 micron disposable filter.
- Store solution at -20°C.
- For blue/white screening, 0.1mM final IPTG concentration in LB (Luria Broth) media is recommended

## Associated Products

Product Name	Pack Size	Catalog No.
X-GAL Powder	1g	BIO-37035
IPTG Solution	10ml	BIO-37062
Quick-Stick Ligase	50 reactions	BIO-27027
SureClean	5ml	BIO-37042
$\alpha$ -Select Gold Efficiency Competent Cells	1ml	BIO-85027
CH3-Blue 10 <sup>9</sup> Chemically Competent Cells	1ml	BIO-85040
BioBlue 10 <sup>9</sup> Chemically Competent Cells	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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