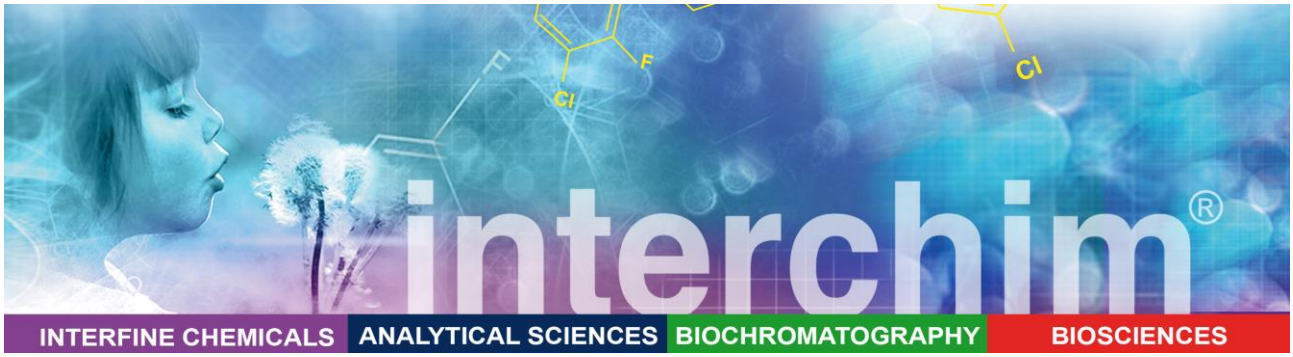
FT-848530



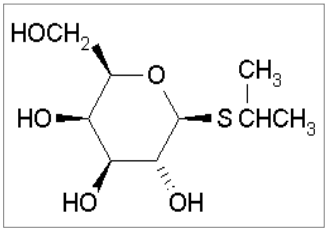
IPTG

Maximize the expression of genes in expression vectors

Product Description

Chemical name : **IPTG**; Isopropyl-b-D-thiogalactopyranoside
CAS: 367-93-1

Catalog Number : **UP84853C**, 1 g **UP84853D,** 10x1 g
UP84853D, 10x1 g
84853G, 25 g
84853H, 50 g
84853I, 100 g



Structure : $C_9H_{18}O_5S$,
MW: **238.3** g/mol

Purity: >99%, Biotech grade

Storage: +4°C, keep dry (-20°C longer term),
Protect from light and moisture (L)

IPTG is an artificial inducer of the Lac operon. It induces the activity of beta-galactosidase by strongly binding and inhibiting the lac repressor.

Directions for use

IPTG is a Ultra Pure product (>99%) designed for Biotech applications, typically for blue/white colony screening experiment or other enzyme reporter systems (i.e. β-galactosidase) regulated by lacz gene. IPTG is also used in the overexpression of proteins.

IPTG Preparation

CAUTION: Avoid contact with eyes, skin, and clothing. Wash thoroughly with water after handling.
Warm to room temperature before opening

Solubility is >5% in water. IPTG is normally used as a 100 mM stock solution in water. Aliquots should be stored at -20°C and thawed only 3-4 times.

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Cloning experiments

IPTG is used to induce lacZ gene expression in cloning experiments, that is widely used to regulate activity of beta-galactosidase, an enzyme that promotes promote lactose utilization, by binding strongly to lac operon.
Being a synthetic analog of galactose, IPTG cannot be hydrolyzed and broken down by the cell. Hence, its concentration does not change during an experiment.

IPTG is typically assayed in presence or absence of undesirable inhibitors of cell growth by testing a range of concentrations (0 -1.2 mM; recommended is 0.5 mM) after plating a constant cell number of E. coli harboring a suitable vector on LB/carbenicillin plates. The plates are evaluated for number, size and color intensity of colonies after an overnight incubation at 37°C.
Agar plates and overlays should contain IPTG at a concentration of 0.5 mM. IPTG may be added to previously poured plates by spreading 100 ml of the stock solution onto a 100 mm plate and allowing it to dry.

Many related protocoles can be found in the literature.

Robert S. Donovan, *et al.*, Optimizing the expression of a monoclonal antibody fragment under the transcriptional control of the Escherichia coli lac promoter, *Can. J. Microbiol./Rev. can. microbiol.* 46(6): 532-541 (2000)

OverExpression of protein experiments

The recommended concentration for this application is 0.1 mM to 0.4 mM and will vary with the clone and strain of bacteria.

Technical information

Additional Physico-Chermical data

Melting point :	112-114°C	**Specific rotation** (1% water)**:**	Solution (5% H_2O) -32°+/-1
Water content :	Karl Fischer <1%	**Dioxane :**	GLC <1ppm

References:

- **Sambrook, J., Russell, D.W**., Molecular Cloning: A Laboratory Manual, the Third edition, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, 1.124-1.125, A1.27, 2001 ; Abstract, Article
- **Yeretssian G.** *et al*., Competition on Nitrocellulose-immobilized Antibody Arrays, From Bacterial Protein Binding Assay to Protein Profiling in Breast Cancer Cells, *Molecular & Cellular Proteomics* 4:605-617 (2005) Article

Legals

For R&D use only.

Related products

- X-Gal, UP40534M
- UptiFectin-ON DNA transfection reagent, CK5060
- DH5-alpha competent cell, CE0981
- LB Broth, Miller, GS3160
- Lexsy recombinant protein starter kit, IL1570

Many other β-galactosidase substrates, chromogenic as well fluorigenic, are available. See D71.

Ordering information

For any information, please ask : Uptima / Interchim; Hotline : +33(0)4 70 03 73 06
Order on-line or Contact your local distributor

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