

## Isopropyl $\beta$ -D-1-thiogalactopyranoside (IPTG)

| Catalog Number | Size   |
|----------------|--------|
| #GB103         | 1, 5 g |

### Description

IPTG is a small molecule commonly used as an inducer of beta-galactosidase, an enzyme encoded by the gene *lacZ*. IPTG binds the lactose repressor (*LacI*) and alters its conformation and inactivates the repressor, which prevents the repression of the  $\beta$ -galactosidase coding gene *lacZ*, thereby stimulates transcription of gene downstream of the lac promoter.

### Properties

**Source:** Synthetic

**Product Type:** Lyophilized Powder

**Appearance:** White Powder

**Solubility (200 mM aq):** Clear/Colorless

**Purity:**  $\geq 98\%$  by HPLC

**Formula:**  $C_9H_{18}O_5S$

**Molecular Weight:** 238.3 g/mol

**IR:** Consistent with Assigned Structure

### Applications

IPTG is commonly used in protein expression procedures that require induction of  $\beta$ -galactosidase activity. It is used in conjunction with X-Gal or Bluo-Gal in blue-white selection of recombinant bacterial colonies that induce expression of the lac operon in *Escherichia coli*. IPTG functions by binding to the *lacI* and altering its conformation, which prevents the repression of the  $\beta$ -galactosidase coding gene *lacZ*.

### Storage

**Storage Temperature:**  $-20\text{ }^{\circ}\text{C}$

**Expiry Date:** 1 year from date of manufacture

**Disclaimer:** This product is for research use only, not for drug, household, or other uses.