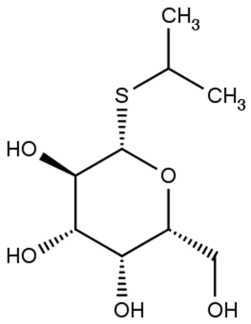
IPTG, ultra pure



Catalog No: 05684
Lot No: XXXXX
Cas No: 367-93-1
Formula: $C_9H_{18}O_5S$
MW: 238.3
Supplied as: solid
Stability: store at -20°C, protect from light

Background
Isopropyl β-D-1-thiogalactopyranoside (IPTG) is a molecular mimic of allolactose, a lactose metabolite that triggers transcription of the lac operon, and it is therefore used to induce protein expression where the gene is under the control of the lac operator. Like allolactose, IPTG binds to the lac repressor and releases the tetrameric repressor from the lac operator in an allosteric manner, thereby allowing the transcription of genes in the lac operon, such as the gene coding for beta-galactosidase, a hydrolase enzyme that catalyzes the hydrolysis of β-galactosides into monosaccharides. But unlike allolactose, the sulfur (S) atom creates a chemical bond which is non-hydrolyzable by the cell, preventing the cell from metabolizing or degrading the inducer. The concentration of IPTG therefore remains constant and the expression of lac p/o-controlled genes would not be inhibited during the experiment.. In blue-white screen, IPTG is used together with X-gal. Blue-white screen allows colonies that have been transformed with the recombinant plasmid rather than a non-recombinant one to be identified in cloning experiments.

Tests	Specifications
Assay (HPLC):	≥99%
Solution (25°C, 5% in H_2O):	clear, colorless
Water (K.F.):	≤1.0%
Melting point:	106.5 – 113.5°C
pH (25°C, 5%, H_2O):	5.0 – 7.0
Dioxane (GLC):	≤1 ppm
Optical Rotation (C=1, H_2O):	-31.0 - -33.0°
Abs. (2% in H_2O, 1 cm)	
A_{260}	≤0.07
A_{280}	≤0.050

Usage
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