

Product Information

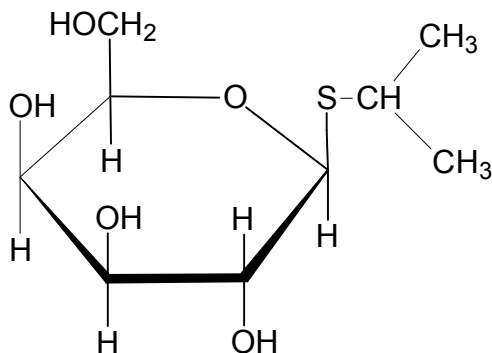
Isopropyl β -D-1-thiogalactopyranoside

Catalog Numbers **I5502 AND I6758**

Storage Temperature 2-8 °C

CAS #: 367-93-1

Synonym: IPTG



Product Description

Molecular Formula: C₉H₁₈O₅S

Molecular Weight: 238.30

Appearance: white to off-white powder.¹

Melting Point:

I5502: Not more than a 4° range between 116 to 126°C¹

I6758: Approximately 110°C. (lot-to-lot variability has been observed).

I5502 is supplied as a powder that contains residual (10-22%) 1,4-dioxane, a known carcinogen. I6758 is an essentially dioxane-free (<0.1% 1,4-dioxane) powder.

IPTG is a non-metabolizable galactose analog that induces expression of the *lac* operon in *Escherichia coli*.^{2,3} IPTG functions by binding to the *lac* repressor and altering its conformation.⁴⁻⁹ This inactivation prevents the repression of the β -galactosidase coding *lac* gene. While not a substrate for β -galactosidase,² it is a substrate for thiogalactoside transacetylase¹⁰ and has been reported to be an inducer of penicillinase activity in bacteria.¹¹

IPTG is a commonly used reagent in cloning procedures that require induction of β -galactosidase activity and is used in conjunction with X-Gal, Catalog Number B9146, or Blu-Gal, Catalog Number B2904, in blue-white color selection of recombinant bacterial colonies.

Preparation Instructions

IPTG is soluble at 250 mg/ml in water and may be sterilized by filtration through a 0.22 μ m filter. The solution may be aliquoted and stored at -20 °C.¹² IPTG solutions can be stored at room temperature for up to one month. When preparing culture plates, aliquots of X-Gal and IPTG may be added to the agar solution after it has been cooled to ~45 °C.

Storage/Stability

As supplied, these products should be stored at 2-8 °C and will have shelf-lives of 5 years.

References

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6. Koenen, M. et al., *EMBO J.*, 1, 509 (1982).
7. Orrego, C. and Fox, M.S., *Mutations Research*, 109, 169 (1983).
8. Powell, R. et al., *Nucleic Acid Res.*, 18, 2190 (1990).

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10. Zabin, I. et al., *J. Biol. Chem.*, 237, 253 (1962).
11. Genet. Biotechnol. Bacilli, 2nd. ed., Ganesan, A.T., Hoch, J.A., Eds.)(Academic Press, 1983) p. 249.
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