Saint Louis, Missouri 63103 USA
Telephone (800) 325-5832 (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

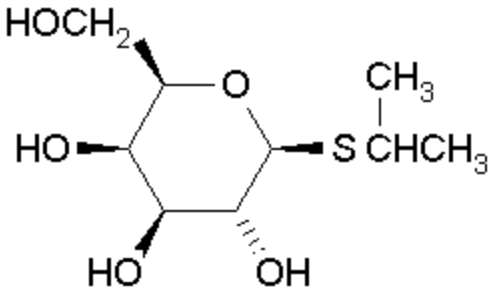
ProductInformation

IPTG Ready Made

Product Number: **I1284**
Storage temperature –20ºC

Product Description

Cas No. : 367-93-1
Synonym: Isopropyl ß-D-thiogalactoside [IPTG]
Molecular Formula: $C_9H_{18}SO_5$
Molecular Weight: 238.31



Isopropyl thiogalactose (IPTG) is a sugar derivative widely used for the induction of recombinant protein expression in E.coli.[1-3]
Most of the vectors designed for recombinant protein expression in E.coli, have the gene of interest under the control of the Lac promoter. This promoter is under the control of Lac repressor and is activated only in the presence of lactose or its synthetic analog IPTG. Like lactose, IPTG binds the repressor and releases it from its binding to the promoter, but unlike lactose it is not metabolized. Moreover, the kinetics of the induction by IPTG occurs at a much higher rate than by lactose.[4]
The release of the repressor allows the transcription of the target gene.[1,5]

Reagent

IPTG Ready Made is a 0.22 µm filtered sterilized solution of 200 mM IPTG, which remains liquid at its storage temperature (-20°C). Thus, the product does not go through freeze-thaw cycles.

Precautions and Disclaimer

This product is for laboratory research use only, not for drug, household, or other uses. Please refer to the Material Safety Data Sheet (MSDS) for information regarding hazards and safe handling practices.

Storage/Stability

The product is shipped on dry ice and storage at -20ºC is recommended.

Product Profile

The product can be added to culture media, for induction of recombinant protein expression.
The recommended concentration for protein induction use in culture media is ~ 1 mM.[3,4]

References

1. Donner, J., Caruthers, M.H. and Gill, S.J., A calorimetric investigation of the interaction of the lac repressor with inducer. J. Biol. Chem., **257,** 14826-14829 (1982).
2. Molecular Cloning, a laboratory manual, 2nd edition, Chapter 17, Ed: Sambrock, J., Fritsch, E.F., and Maniatis, T., Cold Spring Harbor Laboratory Press (1989).
3. Current Protocols in Molecular Biology, Ed: Ausubel, F.M., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, L.A., and Struhl, K., Chapter 16, Massachusetts General Hospital & Harvard Medical School.
4. Howhan, P., and Pornbanlualap, S., Cloning and effective induction of *Escherichia coli* nucleoside diphosphate kinase by lactose, ScienceAsia, **29**, 347-353 (2003).
5. Miroux, B., and Walker, J.E., Over-production of Proteins in *Escherichia coli*: Mutant hosts that allow synthesis of some membrane proteins and globular proteins at high Levels, J. Mol. Biol., **260**, 289-298 (1996).

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