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DATASHEET

X-Gal

Product overview

Name	X-Gal
Cat No	HB4128
Alternative names	Bromochloroindoxyl galactoside
Biological action	Substrate
Purity	>99%
Description	Detects presence and activity of β -galactosidase. Widely used in cloning applications.

Biological Data

Biological description

Overview

X-Gal is a cell permeable, chromogenic substrate for β -galactosidase. It consists of galactose linked to a substituted indole.

β -galactosidase hydrolyzes X-gal to release an insoluble, bright blue precipitate.

Uses

X-Gal is frequently used in molecular biology cloning applications to detect the activity of β -galactosidase.

It is often used with IPTG in blue/white screening for bacterial colony selection in which X-Gal provides a visual indication of the cellular expression of β -galactosidase.

Solubility & Handling

Storage instructions Solubility overview Important

+4 °C

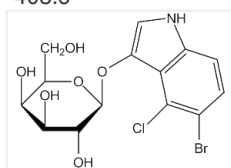
Soluble in DMSO (30 mg/ml)

This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name Molecular Weight Chemical structure

5-Bromo-4-chloro-3-(β -D-galactopyranosyloxy)indole
408.6



Molecular Formula CAS Number PubChem identifier SMILES

C₁₄H₁₅BrClO₆

7240-90-6

65181

ClC1=C(C(O[C@H]3[C@H](O)[C@@H](O)[C@@H](O)[C@@H](CO)O3)=CN2)C2=CC=C1Br

Chemical name	5-Bromo-4-chloro-3-(beta-D-galactopyranosyloxy)indole
InChi	InChI=1S/C14H15BrClNO6/c15-5-1-2-6-9(10(5)16)7(3-17-6)22-14-13(21)12(20)11(19)8(4-18)23-14/h1-3,8,11-14,17-21H,4H2/t8-,11+,12+,13-,14-/m1/s1
InChiKey	OPIFSICVWOWJMJ-LMNFNBGQSA-N
MDL number	MFCD00005666
Appearance	White to off-white powder. Clear, colourless to light yellow in solution

References

Substrates For Cytochemical Demonstration Of Enzyme Activity. I. Some Substituted 3-Indolyl-Beta-D-Glycopyranosides

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Screening Bacterial Colonies Using X-gal and IPTG: β -Complementation

Sambrook J *et al* (2006) CSH Protoc 2006

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Overview and assessment of the histochemical methods and reagents for the detection of β -galactosidase activity in transgenic animals

Trifonov S *et al* (2016) Anat Sci Int 91(1)

PubMedID [26394634](#)

LacZ β -galactosidase: structure and function of an enzyme of historical and molecular biological importance

Juers DH *et al* (2012) Protein Sci 21(12)

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