

X-GAL

Shipping: On Dry/Blue Ice Catalog number

Batch No.: See vial BIO-37035: 1 g

Store at **-20 °C**

meridian BIOSCIENCE™

Storage and stability:

X-GAL is shipped on dry/blue ice. On arrival store at -20 °C for optimum stability. Repeated freeze/thaw cycles should be avoided.

Expiry:

When stored under the recommended conditions and handled correctly, full activity of the kit is retained until the expiry date on the outer box label.

Safety precautions: Harmful if swallowed. Irritating to eyes and skin. Please refer to the material safety data sheet for further information and safety handling practice.



Xn: Harmful

Quality control specifications:

X-GAL is extensively tested for activity and absence of contamination prior to release.

Notes:

For research or further manufacturing use only.

Description

5-bromo-4-chloro-3-indolyl β-D-galactopyranoside (X-GAL) is a chromogenic substrate for β-Galactosidase that forms an intense blue precipitate. It can be used in molecular biology to detect the *gal* gene product, and also in microbiology where it is used to detect microorganisms which have β-Galactosidase activity (usually coliforms). It can be combined with the R-substrates to differentiate between two species of organisms on the same plate. X-GAL is soluble in N, N-dimethylformamide or dimethylsulfoxide (DMSO). Together with appropriate bacterial cloning vectors, host strains, and IPTG, X-GAL provides an easy way to distinguish between positive and negative clones after transformation.

Features

- Extremely pure, 99.5 % by TLC (Thin Layer Chromatography)
- Intense blue precipitate upon hydrolysis

Applications

- Blue/White colony screening to distinguish recombinant (white) and non-recombinant (blue) colonies
- Immunoblotting
- Detect β-galactosidase activity in immunological and histochemical assays
- Microbiology and cell culture media

Protocol

Prepare a 20 mg/mL stock solution of X-Gal in N,N-dimethylformamide (DMF) or dimethylsulfoxide (DMSO). Sterilization is not required. Store stock solution in glass container protected from light at -20 °C. Solutions may be stored at -20 °C for 6-12 months. If a solution turns pink, it should be discarded. DMF dissolves some plastic materials. Direct addition of DMF containing solution to plastic Petri dishes should be avoided.

Procedures

Blue/White Colony Screening

a) X-Gal included in agar: Add 5 mL of X-Gal stock solution and 5 ml of 0.1 M isopropyl-b-D-thiogalactoside (IPTG, BIO-37036) for each 1L of autoclaved media agar (e.g. LB agar) containing appropriate antibiotics just before pouring. The media should be below 55 °C. Plate cells on cooled agar and incubate overnight at 37 °C.

b) X-Gal applied to top of agar: To a premade LB agar plate (e.g. prepared using LB agar), add 40 µL of X-Gal stock solution (at room temperature) and 4 µL of a 200 mg/mL solution of IPTG.

Spread solution over the entire surface of the plate. Incubate at 37 °C until the fluid is no longer visible. This may take several hours. Plate cells and incubate overnight at 37 °C.

Product Citations

1. Wilson, A.C., *et al. J. Bacteriol.* **190(15)**, 5522-5525(2008).
2. Liapis, E., *et al. NAR* **36(18)**, 5933-5945 (2008).
3. Corbett, D., *et al. J. Biol. Chem.* **282**, 33326-33335 (2007).
4. Toledo-Arana, A., *et al. J. Bacteriol.* **187(15)**, 5318-5329 (2005).
5. Staddon, J.H., *et al. Plasmid* **56(2)**, 102-111(2006).
6. Maruta, F., *et al. Can. Gene Therapy* **9(6)**, 543-552 (2002).
7. Marani, M., *et al. Mol. Cell. Biol.* **22(11)**, 3577-3589 (2002).

Associated Products

IPTG Powder	BIO-37036
SureClean Plus	BIO-37047

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