IPTG solution (50mg/mL) Instructions

Item number: I1020
Specification: 5mL
Storage: Store at -20℃ away from light, valid for at least 12 months.

Product Description:

IPTG is a comfort inducer and X-gal is a chromogenic substrate, both of which are used for screening blue and white spots. IPTG can induce the Lac operon DNA segment to synthesize the amino-terminal segment of β-galactosidase, which can complement the defective β-galactosidase encoded by the host cell (α complement). Alpha-complementing bacteria can form blue colonies when spread on a medium containing X-gal chromogenic substrate. When foreign DNA is inserted into the polyclonal site of the plasmid, alpha complementation can be destroyed and white colonies will be produced. IPTG is also a commonly used inducer of recombinant protein expression in genetic engineering.

This product is a sterile solution of IPTG dissolved and filtered by double steaming water.

Instructions for use (for reference only) :

Protein expression induction: 50 mg/mL concentration of 210 mM. If the final concentration is required to be 0.5 mM, 2.38 mL IPTG solution (50 mg/mL) is added to the medium per liter. If other induction concentrations need to be used in the experiment, calculate the amount to be added by yourself.

Blue-white spot screening:

(1) In 100 mL AGAR medium, 500 μL X-gal solution (20mg/mL), 250 μL IPTG solution (50 mg/mL) and 100 μL Amp (ampicillin, 100 mg/mL) were added to prepare a plate medium containing X-Gal, IPTG and Amp. After autoclaving, X-Gal, IPTG and Amp should be added to the culture medium when it is cooled below 55℃ to prevent inactivation.

(2) In fact, X-gal and IPTG can be directly applied on the surface of plate medium, 90mm plate, X-gal (20 mg/mL) with 40 μL, IPTG (50 mg/mL) with 16 μL. Double the amount of 150 mm plate, and let the coated liquid dry before use. After the plate is laid, the bacteria are cultured at 37℃ overnight, and the gene recombinants can be easily selected according to the blue-white color of the bacteria that grow out (the white colony is the gene recombinants with DNA insertion fragments).

Matters needing attention:

For your safety and health, please wear a lab coat and wear disposable gloves when operating.

Related products:

I1020	*IPTG Solution (50mg/mL) X1010 X-gal(20mg/mL)*
A1170	*Ampicillin storage Solution (100mg/mL) C1100 DH5α receptor cells*
C1300	*JM109 receptor cell*
D1100	*plasmid extraction kit*
T1120	*TE buffer, PH=8.0*

Related literature:

[1] Zaiqiang Wu,Junsong Wang,Jun Liuet al. Engineering an electroactive Escherichia coli for the microbial electrosyn -thesis of succinate from glucose and CO2. Microbial Cell Factories. January 2019. (IF 4.402)

[2] Zaiqiang Wu,Junsong Wang,Xueli Zhang,et al. Engineering an electroactive Escherichia coli for the

microbial electro -synthesis of succinate by increasing the intracellular FAD pool. Biochemical Engineering Journal. June 2019; 146:132-142. (IF 3.371)

Note: For more information about this product, please refer to the Solarbio website.