

## IPTG 1M EZ-Pak™ Protocol

### Introduction

IPTG is an analog of galactose that is non-metabolizable and inactivates the lac repressor to induce synthesis of  $\beta$ -galactosidase in *E. coli*. The expression of cloned genes under the control of the lac operon is induced by IPTG. It is also a substrate for thigalactoside transacetylase and has been reported to induce penicillinase in bacteria.

IPTG is also used in the induction of recombinant proteins. In those systems, a protein of interest is encoded downstream of the IPTG inducible promoter. In the presence of IPTG, the protein of interest is induced in the cell culture. The culture can then be lysed and the protein expressed and purified through a number of methods, including [His Tag](#) or [GST](#) purification systems (for proteins with ligand tags).

The IPTG EZ Pak™ is the fastest and easiest way to make a set amount of sterile IPTG solution. The kit includes preweighed IPTG powder, a sterile filter, and a sterile container for the filtered solution. No need to calculate, simply add the stated amount of deionized H<sub>2</sub>O, filter, and pour into the labeled bottle for easy usage. The EZ Pak™ includes high quality GoldBio IPTG and the sterile solution is ready for tissue culture, bacterial media, or any other appropriate use.

IPTG is commonly used with [X-Gal \(Gold Bio # X4281C\)](#) or [Bluo-Gal \(Gold Bio # B-673\)](#) for blue/white colony screening or [Magenta-Gal \(Gold Bio # B-378\)](#) for red/white colony screening of bacterial colonies.

### Materials

- 1 Bottle of IPTG powder
- 1 Sterile empty bottle for solution
- 1 Sterile Filter (and syringe for EZ10)

### Method

#### Reconstitution Protocol

1. Warm IPTG powder bottle to Room Temperature.
2. Add specified volume of dH<sub>2</sub>O to IPTG powder bottle.

Product Catalog #	Volume of H <sub>2</sub> O to Add	Final Volume
<a href="#">I2481C-EZ10</a>	8.1ml	10ml
<a href="#">I2481C-EZ50</a>	40.5ml	50ml
<a href="#">I2481C-EZ100</a>	81.0ml	100ml

3. Mix until all product goes into solution.
4. Sterile Filter:
  - a. For I2481C-EZ10 -
    - i. Remove syringe from packaging.
    - ii. Carefully remove top of sterile filter packaging.
    - iii. Suck up as much solution as possible into syringe.
    - iv. Screw the Leur end of the syringe into the top of the sterile filter.
    - v. Carefully place the filter assembly above the empty bottle, and slowly depress the syringe plunger. Allow all solution to flow through the filter.
    - vi. Once all solution has been filtered, close the top of the solution bottle and store at -20°C. Make aliquots if desired. Discard filter and syringe.
  - b. For I2481C-EZ50 and EZ100 -
    - i. Remove vacuum filter from packaging.
    - ii. Attach vacuum hose according to instructions on filter packaging.
    - iii. Add solution to the upper cup of the filter.
    - iv. Apply vacuum pressure and let all the solution in the top cup flow through the filter into the bottom cup. Stop vacuum when all solution is filtered.
    - v. Remove vacuum attachment from filter and close bottle with provided sterile cap.
    - vi. Tightly seal solution bottle and store at -20°C. Make aliquots if desired. Discard filter.

### Associated Products

- [X-Gal \(Gold Bio Catalog # X4281C\)](#)
- [Bluo-Gal \(Gold Bio Catalog # B-673\)](#)
- [Magenta-Gal \(Gold Bio Catalog # B-378\)](#)