

Ampicillin 100 mg/ml EZ-Pak™ Protocol

Introduction

Ampicillin sodium is a member of the extended-spectrum β -lactam family and similar in structure to penicillin. It is used in the selection of antibiotic cell hybrids and has a high rate of action against many gram-negative bacterial strains. Ampicillin sodium targets non-ESBL (Extended Spectrum β -lactamase) bacteria including *Staphylococcus* and *Streptococcus* species and medically important enteric pathogens such as *Shigella* and *Salmonella*. It has been found to be effective against certain β -lactam sensitive VRE or vancomycin resistant *Enterococcus* species. Resistance to ampicillin is routinely utilized as a selectable marker to confirm successful cell transformation. Ampicillin Sodium is freely soluble in water.

β -lactams inhibit the formation of peptidoglycan cross-links within bacterial cell walls by targeting penicillin-binding proteins or PBPs. Consequently, the bacterial cell wall becomes weak and cytolysis occurs. Resistance to β -lactam antibiotics occurs in the presence of cells containing plasmid encoded extended spectrum β -lactamases or ESBLs.

The Ampicillin (Sodium) EZ Pak™ is the fastest and easiest way to make a set amount of sterile ampicillin (sodium) solution. The kit includes pre-weighed ampicillin (sodium) powder, a sterile filter, and a sterile container for the filtered solution. No need to calculate, simply add the stated amount of deionized H₂O, filter, and pour into the labeled bottle for easy usage. The EZ Pak™ includes high quality GoldBio ampicillin (sodium) and the sterile solution is ready for tissue culture, bacterial media, or other appropriate use.

Materials

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

Method

Reconstitution protocol.

1. Warm Ampicillin powder bottle to Room Temperature.
2. Add specified volume of dH₂O to Ampicillin powder bottle.

Product Catalog #	Volume of H ₂ O to Add	Final Volume
A-301-EZ10	9.2 ml	10 ml
A-301-EZ25	23.0 ml	25 ml
A-301-EZ50	46.0 ml	50 ml
A-301-EZ100	92.0 ml	100 ml

3. Mix until all product goes into solution.
4. Sterile Filter:
 - a. For A-301-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 A-301-EZ25, 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.
5. Use Ampicillin at a final concentration of 100 µg/ml.