

## SOB Broth and Sterile SOC Medium (J906, J836)



SOB Broth from AMRESCO is used for the cultivation of recombinant strains of *Escherichia Coli*.

### Background:

SOB Broth is a nutritionally rich growth medium that was developed by Hanahan<sup>1</sup> for the preparation and transformation of competent cells. By placing the bacterium in this rich medium, perforations are being created in the bacterial cell wall. Thus, they are being prepared for the introduction of foreign DNA into the cell, and to help survive this process, they are placed into this rich, isotonic environment. SOC Medium can be used during the final stages of cell transformation. It is prepared by adding 20 mls of a 20% sterile solution of Dextrose to one liter of sterile SOB Medium. This carbon source provides the additional energy requirements needed for *E. coli* to use in repairing the perforations caused by the transformation process and in replicating<sup>2</sup>.

Within these mediums, tryptone and yeast extracts provide the nitrogen and growth factors needed for the cells to replicate and to recover from the transformation process. Sodium chloride is present to produce a suitable osmotic environment for cell growth, and magnesium sulfate provides the magnesium ions used in the enzymatic reaction of DNA replication.

### Formula: (Per Liter)

Tryptone = 20.0g  
Yeast Extract = 5.0g  
Sodium Chloride = 0.5g

Additional supplements, as necessary, to be added after autoclaving: 20 mls of 1M MgSO<sub>4</sub>.  
The above supplemental solution should be sterilized separately by filtration prior to addition to the broth.

### Storage:

Dehydrated media should be stored in a dry area at 18-26°C.  
Prepared media should be stored at 2-8°C.

### Method of Preparation:

1. Suspend 25.5 grams of SOB Broth powder in 1 L of purified water.
2. Allow the powder to dissolve. Heat and stir gently if required. Adjust pH as necessary.
3. Autoclave at 121°C for 15 minutes.
4. Allow the solution to cool to 50°C or below before adding antibiotics or additional nutritional supplements.

### Quality Control:

All powders will have a light beige, free-flowing homogenous appearance.  
All solutions will have a light to medium amber, clear appearance.

### References:

1. Hanahan, D. 1983. Studies on transformation of *Escherichia coli* with plasmids. *Journal of Molecular Biology*, 166:557.
2. Sambrook, J., E. F. Fritsch and Maniatis. 1989. *Molecular cloning: a laboratory manual*, 2nd ed. Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y.

### Ordering Information:

<u>Product</u>	<u>Code</u>	<u>Size</u>
SOB Broth	J906	100g 500g
SOC Medium, Sterile	J836	50 ml 100 ml

FOR LABORATORY USE ONLY

