Hanahans Broth (SOB Medium), Granulated

Hanahans Broth (SOB Medium), granulated is recommended for use in cultivation of recombinant strains of *Escherichia coli*.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casein enzymic hydrolysate</td>
<td>20.000</td>
</tr>
<tr>
<td>Yeast extract</td>
<td>5.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>0.500</td>
</tr>
<tr>
<td>Magnesium sulphate</td>
<td>2.400</td>
</tr>
<tr>
<td>Potassium chloride</td>
<td>0.186</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.0±0.2</td>
</tr>
</tbody>
</table>

**Directions**

Suspend 28.08 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Dispense in tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

**Principle And Interpretation**

Transformation is a process involving the uptake of foreign genetic material, which on subsequent recombination event results into genetically altered cell. The ability of a bacterium to take up exogenous DNA from the extracellular environment is termed as competence of the bacterium. Factors affecting the cell surface are important to competence, particularly changes in the membrane permeability, so as to allow the foreign DNA to enter the recipient cell (1). Bacteria undergoing transformation need to be cultured on a rich, isotonic medium to overcome or recover from the process of transformation by mending the perforations caused by transformation and undergo replication (2). Hanahans Broth developed by Hanahan (3) is used for the cultivation of these recombinant *Escherichia coli* strains that have undergone transformation.

Hanahans Broth is a nutritionally rich growth medium for use in the preparation and transformation of competent cells. For generation of competent cells, the bacteria is grown in Hanahans Broth to the desired turbidity and subjected to standard procedures such as electroporation or treatment with CaCl2 in chilled conditions to achieve competence. For the survival of such perforated, competent cells, a rich, isotonic environment is needed. Hanahans Broth with 0.4% dextrose is used in the final stage of transformation, which provides carbon and energy source for mending the perforations and subsequent replication (2).

Casein enzymic hydrolysate and yeast extract in the medium supply nitrogenous compounds and growth factors for the recombinant *E. coli*. Potassium and sodium chloride maintains isotonic conditions. Magnesium sulphate is added to the medium as the necessary component for DNA replication.

**Quality Control**

**Appearance**

Cream to yellow coloured granular medium

**Colour and Clarity of prepared medium**

Medium amber coloured, clear solution without any precipitate

**Reaction**

Reaction of 2.8% w/v aqueous solution at 25°C. pH : 7.0±0.2

**pH**

6.80-7.20

**Cultural Response**

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
</tr>
</thead>
</table>

Please refer disclaimer Overleaf.
**Escherichia coli DH5 53868**

**good-luxuriant**

**Storage and Shelf Life**

Store below 30°C in tightly closed container and prepared medium at 2-8°C. Use before expiry period on the label.

**Reference**


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**Disclaimer:**

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