Prostaglandin E₂

Product Number  P 5640
Storage Temperature  -0 °C

Product Description
Melting Point: 66 - 68 °C

Prostaglandin E₂ (PGE₂) stimulates the production of interleukin-6 (IL-6) by neonatal mouse parietal bones. After 6 hours in culture, 10⁻⁸ M PGE₂ produced significantly more IL-6 than controls. The pyrogenic activity of PGE₂ was not inhibited by dexamethasone, unlike prostaglandin F₂𝛼. PGE₂ is a signal molecule produced by activated platelets, and may comprise part of a mechanism by which activated platelets utilize adjacent erythrocytes to help in clot formation.

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
PGE₂ is soluble in water at 1.05 mg/ml at 25 °C. The formation of aqueous solutions is pH-dependent, i.e., at a pH above 6 the solubility is about 5 mg/ml (which is the Critical Micelle Concentration, CMC). Stocks solutions of 10 mg/ml can be prepared in ethanol and further diluted with 0.1 M phosphate buffer to obtain the desired concentration (the remaining amount of ethanol is usually insigificant). Alternatively, the ethanol stock solution may be diluted with a sodium carbonate solution (the amount of Na₂CO₃ used should not exceed the amount needed to neutralize the prostaglandin acid). The preparation of aqueous stock solutions of PGE₂ is difficult to achieve. However, in cases where even traces of ethanol are undesirable, PGE₂ can be dissolved by prolonged agitation in 0.1 M phosphate buffer. Rapid dissolution may be effected by ultrasonication, but not for an extended time which may cause heating of the solution.

All solutions should be stored at 2-8 °C and protected from light. When aqueous solutions are frozen, PGE₂ may precipitate. Usually gentle shaking or brief sonication of the solution will dissolve the precipitate.

Storage/Stability
The aqueous stability of PGE₂ at 25 °C:

<table>
<thead>
<tr>
<th>pH</th>
<th>Hours for 10% loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-4</td>
<td>133</td>
</tr>
<tr>
<td>6</td>
<td>53</td>
</tr>
<tr>
<td>8</td>
<td>42</td>
</tr>
<tr>
<td>9</td>
<td>4.2</td>
</tr>
<tr>
<td>10</td>
<td>0.42 (25 min.)</td>
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</tbody>
</table>

In absolute ethanol, PGE₂ loses about 10% potency in about 24 to 36 months at 4 °C at 1 to 10 mg/ml. At lower concentrations solutions are less stable.

References
1. The Merck Index, 12th, Entry# 8064.

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