Kinetin

Cat. No.: HY-N0160
CAS No.: 525-79-1
Molecular Formula: \(\text{C}_{10}\text{H}_{9}\text{N}_{5}\text{O}\)
Molecular Weight: 215.21
Target: Others
Pathway: Others
Storage: Powder
-20°C: 3 years
4°C: 2 years
In solvent
-80°C: 6 months
-20°C: 1 month

**SOLVENT & SOLUBILITY**

**In Vitro**

DMSO: 33.33 mg/mL (154.87 mM; Need ultrasonic)

\(\text{H}_2\text{O}\): < 0.1 mg/mL (insoluble)

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mg</td>
<td>5 mg</td>
</tr>
<tr>
<td>1 mM</td>
<td>4.6466 mL</td>
<td>23.2331 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.9293 mL</td>
<td>4.6466 mL</td>
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<tr>
<td>10 mM</td>
<td>0.4647 mL</td>
<td>2.3233 mL</td>
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</tbody>
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Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (11.62 mM); Clear solution

2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-\(\beta\)-CD in saline)
Solubility: ≥ 2.5 mg/mL (11.62 mM); Clear solution

3. Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (11.62 mM); Clear solution

**BIOLOGICAL ACTIVITY**

**Description**

Kinetin (N6-furfuryladenine) belongs to the family of N6-substituted adenine derivatives known as cytokinins, which are plant hormones involved in cell division, differentiation and other physiological processes. Kinetin has anti-aging effects\(^1\).

**In Vitro**

Kinetin (N6-furfuryladenine) shows to have a direct effect on superoxide dismutase activity in plants; prevent oxidation of unsaturated acids in plant membranes; slow down development and aging in insects, by reducing their fecundity and increasing the specific activity of catalase; and delay the onset of many age-related characteristics that appear in normal
human skin fibroblasts undergoing aging in vitro. Kinetin (70-150 μM) markedly suppressed hydroxyl radical formation by about 41% and 76%, respectively[1].

The plant cytokinin kinetin dramatically increases exon 20 inclusion in RNA isolated from cultured familial dysautonomia (FD) cells[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

<table>
<thead>
<tr>
<th>In Vivo</th>
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<tbody>
<tr>
<td>Kinetin (N6-furfuryladenine) (2-6 mg/kg; injection into the tail vein) effectively prevents ADP-induced acute pulmonary thrombosis in mice[1]. Subjects received 23.5 mg/kg/d for 28 d. An increase in WT IKBKAP mRNA expression in leukocytes was noted after 8 d in six of eight individuals; after 28 d, the mean increase compared with baseline was significant[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</td>
</tr>
</tbody>
</table>

Animal Model: ADP-induced acute pulmonary thrombosis 20-24 g mice (ICR strain)[1]

Dosage: 2, 4, 6 mg/kg

Administration: Injection into the tail vein

Result: Reduced mortality to 70%, 40% and 35% at 2, 4, and 6 mg/kg, respectively.

REFERENCES


Caution: Product has not been fully validated for medical applications. For research use only.