Enoxacin hydrate

Cat. No.: HY-B0268A
CAS No.: 84294-96-2
Molecular Formula: C₁₅H₁₇FN₄O₃.₃/₂H₂O
Molecular Weight: 347.34
Target: Bacterial; Antibiotic; DNA/RNA Synthesis; MicroRNA
Pathway: Anti-infection; Cell Cycle/DNA Damage; Epigenetics
Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)

SOLVENT & SOLUBILITY

In Vitro
1M NaOH : 100 mg/mL (287.90 mM; ultrasonic and adjust pH to 11 with NaOH)
DMSO : 2.78 mg/mL (8.00 mM; Need ultrasonic)
H₂O : 1 mg/mL (2.88 mM; ultrasonic and warming and heat to 80°C)

Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Solvent Mass</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>2.8790 mL</td>
<td>14.3951 mL</td>
<td>28.7902 mL</td>
<td></td>
</tr>
<tr>
<td>5 mM</td>
<td>0.5758 mL</td>
<td>2.8790 mL</td>
<td>5.7580 mL</td>
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</tr>
<tr>
<td>10 mM</td>
<td>0.2879 mL</td>
<td>1.4395 mL</td>
<td>2.8790 mL</td>
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</tr>
</tbody>
</table>

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description
Enoxacin hydrate (Enoxacin sesquihydrate), a fluoroquinolone, interferes with DNA replication and inhibits bacterial DNA gyrase (IC₅₀=126 µg/ml) and topoisomerase IV (IC₅₀=26.5 µg/ml). Enoxacin hydrate is a miRNA processing activator and enhances siRNA-mediated mRNA degradation and promotes the biogenesis of endogenous miRNAs. Enoxacin hydrate has potent activities against gram-positive and -negative bacteria. Enoxacin hydrate is a cancer-specific growth inhibitor that acts by enhancing TAR RNA-binding protein 2 (TRBP)-mediated microRNA processing[1][2][3][4].

IC₅₀ & Target
Quinolone

In Vitro
Enoxacin hydrate (Enoxacin sesquihydrate) increases siGFP-mediated gene knockdown mediated by siRNA against EGFP in HEK293 cells-based reporter system in a dose-dependent manner, with a median effective concentration (EC50) of ~30 µM, whereas it has no effect on the cells expressing GFP only. Enoxacin (50 µM) promotes the processing of miRNAs and the loading of siRNA duplexes onto RISCs in HEK293 cells[3]. Enoxacin has no effect on the processing of pre-let-7 or pre-miR-30a by Dicer alone. However, the addition of Enoxacin can enhance the processing of let-7 or pre-miR-30a by Dicer and TRBP together[3].
Enoxacin inhibits 90% Escherichia coli, Klebsiella sp., Aeromonas sp., Enterobacter spp., Serratia spp., Proteus mirabilis, and Morganella morganii at less than or equal to 0.8 micrograms/ml\(^5\).

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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| Enoxacin hydrate (Enoxacin sesquihydrate; 100 µM; 2 µl; injected into ear once a day for 3 consecutive days (days 12, 13 and 14)) enhances the GFP mRNA knockdown efficiency by Lv-siGFP (from 80% to 60%; 40% GFP mRNA level remained), whereas alone has no effect on GFP expression in GFP transgenic line C57BL/6-Tg(ACTB-EGFP)1Osb/J (10 d old) with lentivirus expressing shGFP (Lv-siGFP; injected into ear for 10 days)\(^3\).

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REFERENCES


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

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