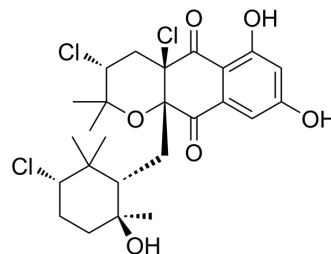


## Napyradiomycin B4

<b>Cat. No.:</b>	HY-N12740
<b>Molecular Formula:</b>	C <sub>25</sub> H <sub>31</sub> Cl <sub>3</sub> O <sub>6</sub>
<b>Molecular Weight:</b>	533.87
<b>Target:</b>	MEK; ERK
<b>Pathway:</b>	MAPK/ERK Pathway; Stem Cell/Wnt
<b>Storage:</b>	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	Napyradiomycin B4 is a Napyradiomycin derivative, which inhibits the RANKL-induced MEK-ERK signaling pathway. Napyradiomycin B4 attenuates osteoclastogenesis and prevents alveolar bone destruction in experimental periodontitis <sup>[1]</sup> .																
<b>In Vitro</b>	<p>Napyradiomycin B4 (5 μM, 4 days) inhibits RANKL-induced osteoclast differentiation<sup>[1]</sup>.</p> <p>Napyradiomycin B4 (5 μM, 4 days) promotes the expressions of Nrf2 related genes and inhibits the expressions of osteoclast related genes<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Immunofluorescence<sup>[1]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>BMMs</td> </tr> <tr> <td>Concentration:</td> <td>1-5 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>4 days</td> </tr> <tr> <td>Result:</td> <td>Revealed no evidence of F-actin ring.</td> </tr> </table> <p>Real Time qPCR<sup>[1]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>BMMs</td> </tr> <tr> <td>Concentration:</td> <td>1-5 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>4 days</td> </tr> <tr> <td>Result:</td> <td>Reduced mRNA expressions of Nfatc1, Acp5, Dcstamp, Ctsk, and Mmp9. Promoted mRNA expressions of Nrf2, Nqo1 and HO1.</td> </tr> </table>	Cell Line:	BMMs	Concentration:	1-5 μM	Incubation Time:	4 days	Result:	Revealed no evidence of F-actin ring.	Cell Line:	BMMs	Concentration:	1-5 μM	Incubation Time:	4 days	Result:	Reduced mRNA expressions of Nfatc1, Acp5, Dcstamp, Ctsk, and Mmp9. Promoted mRNA expressions of Nrf2, Nqo1 and HO1.
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<b>In Vivo</b>	<p>Napyradiomycin B4 (2-12 mg/kg, i.p. for 6 days) exhibits protective effect against osteoclast-mediated bone loss, prevents periodontal bone destruction by suppressing osteoclast formation in C57BL/J6 mice model, without significant toxicity<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1"> <tr> <td>Animal Model:</td> <td>Ligature-induced periodontitis in C57BL/J6 mice model<sup>[1]</sup></td> </tr> </table>	Animal Model:	Ligature-induced periodontitis in C57BL/J6 mice model <sup>[1]</sup>														
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Dosage:	2-12 mg/kg
Administration:	i.p. for 6 days
Result:	Prevented the alveolar bone resorption and bone loss with high dose, inhibited osteoclast formation.

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## REFERENCES

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[1]. Kim JA, et al., Napyradiomycin B4 Suppresses RANKL-Induced Osteoclastogenesis and Prevents Alveolar Bone Destruction in Experimental Periodontitis. ACS Pharmacol Transl Sci. 2024 Apr 3;7(4):1023-1031.

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

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