N-Methylmoranoline

Cat. No.: HY-U00090
CAS No.: 69567-10-8
Molecular Formula: C_{7}H_{15}NO_{4}
Molecular Weight: 177.2
Target: Others
Pathway: Others
Storage: Please store the product under the recommended conditions in the COA.

BIOLOGICAL ACTIVITY

<table>
<thead>
<tr>
<th>Description</th>
<th>N-Methylmoranoline (MOR 14) is an α-glucosidase inhibitor.</th>
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In Vitro

N-Methylmoranoline dose-dependently decreases the α-1,6-glucosidase activity in rabbit heart extract. The myocardial uptake of a considerable amount of N-Methylmoranoline is sufficient to fully inhibit alpha-1,6-glucosidase. Preischemic treatment with 25, 50, and 100 mg/kg of N-Methylmoranoline dose-dependently reduces the infarct size without altering the blood pressure or heart rate\(^1\). MOR-14 significantly increases levels of PKC-ε in the particulate fraction at 20 and 30 min of ischaemia and in the cytosolic fraction at 30 min of ischaemia\(^2\).

In Vivo

N-Methylmoranoline decreases the alpha-1,6-glucosidase activity to approximately 20%, reduces the glycogen breakdown, and attenuates the lactate accumulation at both 10 and 30 minutes of ischemia\(^1\). MOR-14 is protective against postischemic left ventricular dysfunction through the inhibition of glycogenolysis in the isolated rat heart\(^3\).

PROTOCOL

Kinase Assay\(^1\)

The inhibitory action of N-Methylmoranoline against myocardial α-1,6-glucosidase is first examined in rabbit heart extracts. The substrate mixture contained 44 mM glycylglycine (pH 6.5), 12.5% rabbit liver glycogen, 2.5 mM \(^{14}\)C-glucose (20 μCi/μM), 2.1 mM EDTA, 4.1 mM mercaptoethanol, 0.02% gelatin, and N-Methylmoranoline (0, 0.01, 0.03, 0.1, 0.3, or 1.0 μM). This solution (16 μL) is warmed at 30°C for 2 minutes, and the reaction is then initiated by the addition of 4 μL of the rabbit heart homogenate. The reaction is stopped 60 minutes later by the addition of 20 μL of 0.2N HCl. An aliquot (30 μL) is spotted onto a Whatman GF/A glass fiber disk. The disk is immediately washed in 66% ethanol for 20 minutes three times each and dipped in 15 mL of acetone for 10 minutes. Then the disk is dried, and the \(^{14}\)C activity incorporated into glycogen is measured with a liquid scintillation counter\(^1\).

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

Animal Administration\(^1\)

Rabbits: To investigate the infarct size-reducing effect of N-Methylmoranoline, 54 rabbits are assigned randomly into drug treatment or saline control groups. There are four drug treatment groups, ie, three preischemic treatment groups given 100 mg/kg, 50 mg/kg, or 25 mg/kg of N-Methylmoranoline 10 minutes before ischemia, and one prererefusion treatment group given 100 mg/kg of the drug 5 minutes before reperfusion. In all treatments, the injected volume is <1 mL/kg body wt. After the treatment, the coronary artery is occluded for 30 minutes and reperfused. The blood pressure and heart rate are monitored throughout the experiment until 20 minutes after
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**REFERENCES**


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

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