Barlerin

Cat. No.: HY-N0758
CAS No.: 57420-46-9
Molecular Formula: C₁₉H₂₈O₁₂
Molecular Weight: 448.42
Target: NF-κB
Pathway: NF-κB
Storage: Powder -20°C 3 years
        4°C 2 years
        In solvent -80°C 6 months
        -20°C 1 month

BIOLICAL ACTIVITY

Description
Barlerin (8-O-Acetyl shanzhiside methyl ester) is an iridoid glucoside isolated from the leaves of Lamiophlomis rotata Kudo, a Chinese folk medicinal plant in Xi-zang. Barlerin (8-O-Acetyl shanzhiside methyl ester) could inhibit NF-κB.

IC₅₀ & Target
NF-κB

In Vitro
Treatment of SH-SY5Y cells with Barlerin (8-O-Acetyl shanzhiside methyl ester) blocks TNF-α-induced nuclear transcription factor κB (NF-κB) activation and decreases high-mobility group box-1 (HMGB-1) expression. [1]. Treatment of H9c2 cells with Barlerin (8-O-Acetyl shanzhiside methyl ester) 9 μM blocks TNF-α-induced NF-κB phosphorylation by blocking High-mobility group box1 (HMGB1) expression[2].

In Vivo
Barlerin (8-O-Acetyl shanzhiside methyl ester) 40 mg/kg demonstrates significant neuroprotective effect even after delayed administration at 4 hr after I/R. Barlerin 40 mg/kg attenuates the histopathological damage, decreases brain swelling, inhibits NF-κB activation and reduces HMGB-1 expression in ischaemic brain tissue[1]. Barlerin (8-O-Acetyl shanzhiside methyl ester) significantly promotes angiogenesis in the ischaemic brain and improves functional outcome after stroke. Barlerin also significantly increases vascularization compared with vehicle treatment. It increases the expression of VEGF, Ang1, phosphorylation of Tie2 and Akt VEGF[3]. Barlerin (8-O-Acetyl shanzhiside methyl ester) significantly shortens capillary blood clotting time and reduces blood loss volume, but does not influence mice activated partial thromboplastin time, prothrombin time or thrombin time. It significantly prolongs euglobulin clot lysis time in hyperfibrinolysis mice[4].

PROTOCOL

Cell Assay [2]
Prior to hypoxia, cells are pretreated with various concentrations (1, 3, 9 and 27μM) of Barlerin (8-O-Acetyl shanzhiside methyl ester) for 24 h. Cell viability are determined by MTT assay[2].

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

Animal Administration [3][4]
Rats: Barlerin (8-O-Acetyl shanzhiside methyl ester) is prepared in saline. Adult male rats are subjected to 1 hr of middle cerebral artery occlusion (MCAO) and reperfusion, and treated with or without different doses (5 and 10
mg/kg) of ND01, starting 24 hr after ischaemia and reperfusion (I/R) and by intravenous injection daily for 14 days. Neurological functional tests are performed and cerebral Evans blue extravasation is measured[3].

Mouse: Barlerin (8-O-Acetyl shanzhiside methyl ester) is prepared in saline. Male Balb/C mice (20 to 25g) are randomly divided into five groups (saline group, Hemocoagulase, 0.34 KU/kg, i.v. ASM-L, 100 mg/kg, i.v., ASM-M, 250 mg/kg, i.v., ASM-H, 500 mg/kg, i.v.). The drugs and vehicle are injected through vena caudal is 5 min before anesthetized with sodium pentobarbital (200 mg/kg, i.p.). Twenty minutes after injection, blood are drawn from heart. Activated partial thromboplastin time, prothrombin time, thrombin time and fibrinogen are assayed[4].

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REFERENCES


