For Research Use Only

Astragaloside IV

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Catalog Number: CM06754

产品信息

Catalog Number:
CM06754

CAS号:
84687-43-4

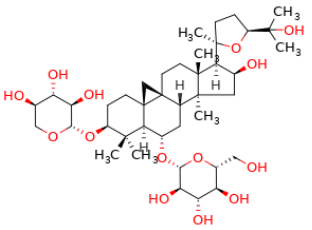
分子式:
$C_{41}H_{68}O_{14}$

主要靶点:
Estrogen/progestogen Receptor|JNK|MMP|ERK

主要通路:
蛋白酶体|MAPK信号通路|内分泌与激素

分子量:
784.99

溶解度:
DMSO:390 mg/mL,Sonification is recommended.



体外活性

Astragaloside IV inhibits the viability and invasive potential of MDA-MB-231 breast cancer cells, suppresses the activation of the mitogen-activated protein kinase (MAPK) family members ERK1/2 and JNK, and downregulates matrix metalloproteases (MMP)-2 and -9. Astragaloside IV (10, 20, 40 ng/mL) inhibits NSCLC cell growth, whereas low concentrations of astragaloside IV (1, 2.5, 5 ng/mL) has no obvious cytotoxicity on cell viability. Furthermore, combined treatment with astragaloside IV significantly increases chemosensitivity to cisplatin in NSCLC cells. On the molecular level, astragaloside IV co-treatment significantly inhibits the mRNA and protein levels of B7-H3 in the presence of cisplatin.

体内活性

In the mice model, the high-dose astragaloside IV group has a significant increase in the 48-hour survival rate [60% (9/15) vs 13.3% (2/15), P < 0.05], significant reductions in the serum ALT and AST levels (P < 0.01), and significant reductions in liver histopathological indices and the degree of apoptosis of hepatocytes (P < 0.01), as well as a significant reduction in the content of MDA in liver homogenate (P < 0.01) and a significant increase in the activity of SOD. Astragaloside IV (10, 20 mg/kg, p.o.) shows a potent ability to prevent cognitive deficits induced by transient cerebral ischemia and reperfusion. Astragaloside IV (10 mg/kg) and Astragaloside IV (20 mg/kg) can significantly decrease the levels of these cytokines compared to the Model group. Astragaloside IV significantly inhibits the level of TLR4 and its downstream proteins, suggesting that both MyD88-dependent and -independent pathways play important roles in the anti-inflammatory effects of Astragaloside IV. Astragaloside IV attenuates NLRP3 and cleaved-caspase-1 expression as well as reduces Iba1 protein expression.

动物实验

Transient cerebral ischemia and reperfusion is prepared by BCCAO. Mice are randomly divided into the Sham, Model, Astragaloside IV (10 mg/kg) and Astragaloside IV (20 mg/kg) treatment groups. The Astragaloside IV treatment groups are intragastrically administered 7 days before the surgery and terminated on the day of sacrifice. On the day of the surgery, Astragaloside IV is administrated 2 h prior to ischemia. The Sham-operated and Model groups are treated with distilled water. After the mice are anesthetized with an intraperitoneal injection of chloral hydrate (350 mg/kg), the bilateral common carotid arteries are exposed and carefully separated with a small ventral neck incision and occluded twice (20 min each) with ligated surgical silk as described previously with minor modifications. There is a 10 min reperfusion period between the two occlusion periods (ischemia 20 min ? reperfusion 10 min ? ischemia 20 min). Sham-operated mice are subjected to the same surgical operation without the surgical silk ligation. Mouse body temperature is maintained at 37±0.5°C during the surgery with heating equipment until recovery from the anesthesia.

细胞实验

CCK-8 assay is adopted to determine cell viability. cultured NSCLC cells are seeded into 96-well plates at the density of 4×104 (cells/well). Then 10 μL?well CCK8 solution is added and incubated in dark at 37°C for another 2 h. The absorbance is determined with the wavelength of 490 nm.

描述

Astragaloside IV, an active component isolated from Astragalus membranaceus, suppresses the activation of ERK1/2 and JNK, and downregulates matrix metalloproteases (MMP)-2, (MMP)-9 in MDA-MB-231 breast cancer cells. Astragaloside IV is a bioactive saponin first isolated from the dried plant roots of the genus Astragalus, which is used in traditional Chinese medicine.1 It dose-dependently inhibits human adenovirus type 3 (HAdV-3) in A549 cells (IC50 = 23 μM; LC50 = 865 μM).It inhibits replication of HAdV-3 and decreases HAdV-3-induced apoptosis. It has diverse protective effects for the cardiovascular, immune, digestive, and nervous systems. In particular, it reduces myocardial infarct size in dogs when administered prior to coronary ligation and reduces reperfusion arrhythmias in isolated rat hearts.

储存

Powder: -20°C for 3 years | In solvent: -80°C for 2 years