Zonampanel

Cat. No.: HY-15072
CAS No.: 210245-80-0
Molecular Formula: C₁₃H₉N₅O₆
Molecular Weight: 331.24
Target: iGluR
Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling
Storage: Please store the product under the recommended conditions in the COA.

BIOLOGICAL ACTIVITY

Description
Zonampanel (YM 872) is a selective antagonist of the glutamate receptor subtype, α-amino-3-hydroxy-5-methylisoxazole-4-propionic acid (AMPA) receptor.

In Vitro
Zonampanel inhibits the human MRP4-mediated transport of [³H]oestradiol 17-D-glucuronide in a concentration-dependent manner. In contrast, Zonampanel (up to 1000 mM) does not inhibit the human MRP2- or BCRP-mediated transport of [³H]oestradiol 17-D-glucuronide or [³H]methotrexate[1]. Zonampanel inhibits the uptake of typical substrates by Oat1, Oat2, and Oat3 with inhibition constant (Kᵢ) values of 7.02 to 10.4 μM. A time- and saturable concentration-dependent increase in [¹⁴C]Zonampanel uptake is observed in these cells [Kᵢ values: 13.4 to 53.6 μM][2].

In Vivo
In in vivo experiments, probenecid and cimetidine decrease intrinsic clearance for both the renal secretion and biliary excretion of Zonampanel[2].

PROTOCOL

Animal Administration[2]
Seven-week-old male Sprague-Dawley rats are used at 8 weeks after acclimatization for at least 1 week. During acclimatization, the rats are kept in an air-conditioned room with temperature and humidity controlled at 22.9 to 23.3°C and 50 to 78%; the room is lit for 12 h 30 min from 7:30 AM to 8:00 PM. Rats are given free access to solid food and water until just before drug administration. YM 872 (15 mg/kg) is administered at a single bolus dose into the rat tail vein with or without probenecid (50 mg/kg) or cimetidine (40 mg/kg). At 5, 15, and 30 min and 1, 2, 3, 4, and 6 h after dosing, blood is sampled under ether anesthesia via the inferior vena cava using a heparinized syringe and immediately stored on ice using four rats each per sampling time point per administration group (total of 128 rats for 8 sampling time points and 4 administration groups). Plasma is obtained by centrifugation at 4°C, 1870 g for 15 min and kept frozen at -20°C. Rats for plasma sampling at 3 and 6 h after administration are housed in metabolic cages after administration, spontaneously excreted urine is collected, and the cages are washed using water. Regarding specific gravity as 1, urine volume (including the cage-wash water) is calculated according to differences in the weight of the sampling tube before and after sampling. Urine samples are kept frozen at -20°C until assay as described below. All plasma and urine samples are protected from light throughout the sampling, storage, and assay procedures.

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