Nitroflurbiprofen

Biochemical Data

**Molecular Formula:** \( \text{C}_{19}\text{H}_{20}\text{FNO}_5 \)

**Molecular Weight:** 361.36

**Target:** COX

**Pathway:** Immunology/Inflammation

**Storage:**
- Pure form: -20°C for 3 years, 4°C for 2 years
- In solvent: -80°C for 6 months, -20°C for 1 month

**BIOLOGICAL ACTIVITY**

**Description**
Nitroflurbiprofen is a cyclooxygenase (COX) inhibitor with nitric oxide (NO)-donating properties, modulates the increased intrahepatic vascular tone in portal hypertensive cirrhotic rats.

**IC\text{50} & Target**
COX

**In Vivo**
In vivo hemodynamic measurements \((n = 8/\text{condition})\) and evaluation of the increased intrahepatic resistance by in situ perfusion \((n=5/\text{condition})\) are performed in rats with thioacetamide-induced cirrhosis that receive either Nitroflurbiprofen (45 mg/kg), Flurbiprofen (30 mg/kg, equimolar concentration to Nitroflurbiprofen), or vehicle by intraperitoneal injection 24 hours and 1 hour prior to the measurements. Treatment with Nitroflurbiprofen, an NO-releasing cyclooxygenase inhibitor, improves portal hypertension without major adverse effects in thioacetamide-induced cirrhotic rats by attenuating intrahepatic vascular resistance, endothelial dysfunction, and hepatic hyperreactivity to vasoconstrictors\(^1\).

**PROTOCOL**

**Animal Administration**\(^1\)
Male Wistar rats, weighing 200-250 g, are used. After 18 weeks of TAA administration, cirrhotic rats are equally \((n=8/\text{group})\) and randomly allocated to one of the following groups: intraperitoneal injection, 24 hours and 1 hour prior to the measurements, with Nitroflurbiprofen (45 mg/kg), Flurbiprofen (30 mg/kg, equimolar concentration to Nitroflurbiprofen), or vehicle (250 μL DMSO:250 μL isotonic saline). The used dose is based on a dose-finding study \((n=5 \text{ per condition})\). The concentrations of Nitroflurbiprofen (15 mg/kg) and Flurbiprofen (7.5 mg/kg, equimolar concentration to Nitroflurbiprofen Flurbiprofen) are started, then are increased the dose to Nitroflurbiprofen 22.5 mg/kg and Flurbiprofen 15 mg/kg, and, finally, Nitroflurbiprofen 45 mg/kg and Flurbiprofen 30 mg/kg. The last dose regimen has the most profound hemodynamic effects.

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

**REFERENCES**

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