**BIOLOGICAL ACTIVITY:**

Wogonin is a naturally occurring mono-flavonoid, can inhibit the activity of CDK8 and Wnt, and exhibits anti-inflammatory and anti-tumor effects.

IC50 & Target: CDK8, Wnt<sup>[1]</sup>, CDK4<sup>[2]</sup>

**In Vitro:** Wogonin (0-200 μM) exhibits a dose- and time- dependent reduces in cell viability of caco-2, SW1116 and HCT116 cells. Wogonin (10-40 μM) induces G1 phase arrest in HCT-116 cells. Wogonin also supresses Wnt signaling pathway in HCT116 cells.

Wogonin interferes in the activity of transcription factor TCF/Lef family. Moreover, Wogonin inhibits β-catenin-mediated transcription through suppressing the activity of CDK8<sup>[1]</sup>. Wogonin shows cytotoxic and antiproliferative effects on HeLa cells. Wogonin (90 μM) induces cell cycle arrest at G0-G1 phase, and suppresses the levels of cyclin D1 and Cdk4 markedly in HeLa cells<sup>[2]</sup>. Wogonin (1.25, 2.5, 5, 10, 20 μg/ml) suppresses EtOH-induced inflammatory response in RAW264.7 cells<sup>[3]</sup>.

**In Vivo:** Wogonin (30, 60 mg/kg) reduces tumor growth of HCT116 cells in a xenograft model<sup>[1]</sup>. Wogonin (25, 50, 100 mg/kg) protects against liver injury and pathological characteristics of ALD in mice. Wogonin activates PPAR-γ expression in mice with ALD and EtOH induced RAW264.7 cells<sup>[3]</sup>.

**PROTOCOL (Extracted from published papers and Only for reference)**

**Cell Assay:** Wogonin is dissolved in DMSO<sup>[1]</sup>-HCT116 cells are planted on a 96-well plate (1 × 10<sup>5</sup> cells per well). Different concentrations of wogonin are added and incubated for 24 h. Subsequently, 20 μL of MTT solution (5 mg/mL) is transferred to each well and the plates are incubated for 4 h at 37°C and 5% CO<sub>2</sub>. The supernatant is aspirated off and 100 μL DMSO is added to dissolve the formazan crystal. The mixture is shaken and measured at 570 nm using a universal microplate reader. **Animal Administration:** Wogonin is prepared in liquid diets.<sup>[3]</sup>C57BL/6 mice, male, 6-8 weeks old, weighing 18-22 g mice are housed at comfortable environment and are acclimatized for 3 days before the experiment. A total of 48 mice are randomly divided into six groups of 8 animals, respectively control diet (CD)-fed mice, EtOH-fed mice, wogonin-treated mice at the dose of 25, 50, 100 mg/kg/day and the positive (dexamethasone, 1 mg/kg/day)-treated mice. Modeling process has a total of 16 days including a liquid diet adaptation period for 3 days and modeling for 13 days. The EtOH-fed mice are fed containing 5% v/v ethanol liquid diets adding certain vitamin and choline for 16 days, and mice are gavaged with a single binge ethanol administration (5 g/kg, body weight, 20% ethanol) at last day. At the same time, the wogonin-treated mice and the positive-treated mice are not only plus the ethanol administration, but also plus the medicines by gavage daily, whereas the CD-fed mice are fed with control liquid diets and gavaged with isocaloric maltose-dextrin at last day. All diets are prepared fresh daily. 9 h after the last gavage alcohol, mice are sacrificed under anaesthesia, the liver tissues and blood are collected for further analysis.

**References:**
