

### Animal care and use statement

Female Sprague-Dawley rats with an initial body weight of 180-200 g were acquired from the Laboratory Animal Center (School of Medicine, Shanghai Jiao Tong University, China). Rats were caged at a constant room temperature of 21 °C, exposed to a 12:12 h light: dark cycle, and allowed free access to water and standard rat chow. All experimental animal procedures conformed to the guidelines outlined in the Guide for the Care and Use of Laboratory Animals and were approved by the Research Ethics Committee of Renji Hospital.

The rats were weighed and administered mixed food daily. For the OVX + CCl<sub>4</sub> group, 400 mL/L of CCl<sub>4</sub> in olive oil was injected subcutaneously at a dose of 4 mL/kg, twice weekly, and the first dosage was doubled. After 14-16 months, this procedure led to micro nodular cirrhosis with portal hypertension. In addition to this, the OVX + CCl<sub>4</sub> + DPN group was treated subcutaneously with 30 nmol/100 g DPN in 1 mL dimethyl sulfoxide (DMSO), twice weekly. Along with CCl<sub>4</sub> and DPN, the OVX + CCl<sub>4</sub> + DPN + PHTPP group also received 30 nmol/100 g PHTPP in 1 mL DMSO, twice weekly. The control group was injected with 1 mL DMSO, twice weekly. After 14 to 16 months, the exposure to CCl<sub>4</sub> and drugs was stopped for six days prior to the start of experiments.

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