

### Animal care and use statement

All rats were fed a standard laboratory diet for a week at room temperature (20-22 °C) with a light/dark cycle of 12 h. Then the rats were randomly divided into four groups of five rats each: i.e., control group, morin group, CCl<sub>4</sub> group, and morin + CCl<sub>4</sub> group. The control rats were treated with vehicle only (olive oil) equivalent to the treatment group. The rats in morin group were treated with morin at a dose of 50 mg/kg (suspended in water as previous study) by oral administration and 2 ml/kg of olive oil by intraperitoneal injection twice a week. The rats in CCl<sub>4</sub> group were injected by intraperitoneal route with CCl<sub>4</sub> at a dose of 2 mL/kg [mixed with olive oil (40%, V/V)] twice a week. The rats in morin + CCl<sub>4</sub> group were treated with same routes and doses of morin and CCl<sub>4</sub> as the morin group and the CCl<sub>4</sub> group. Body weights of animals were recorded twice per week. After 8 weeks of treatment, animals were kept fasting for 24h. Under 10% chloral hydrate anesthesia, the following procedures were performed, including obtaining blood sample from heart for biochemical test and resecting liver and spleen for histopathological analysis. Liver tissues were weighted and cut in 10x10x3 mm pieces. The half of specimen was fixed in 10% formaldehyde for histopathology and other half was immediately frozen in -80°C for PCR and Western blot test.

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